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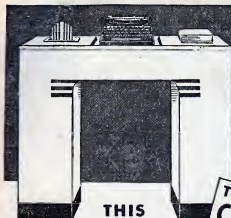
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SCIENCE STORIES

THIS MAGAZINE CONTAINS NEW STORIES ONLY

Vol. 1, No. 5

August, 1939

★ ★ ★ BOOK-LENGTH DARING NOVEL ★ ★ ★

Dark Invasion.....by Frederic Arnold Kummer, Jr. 6

No, this was not just an improved razor-blade disintegrator, this was no mere gadget that John Marker had invented. Though only an ordinary run-of-the-mine engineer, John Marker had overnight given the world a new era, had advanced the world's progress ten thousand years—and doomed his own lovely Mercia to the death-spawning ray-sun of fer Mercury!

★ ★ ★ AN UNUSUAL NOVELET ★ ★ ★

Hour of Judgment.....by R. DeWitt Miller 70

The note was written on ordinary paper, had come in a plain envelope. But it had the same strange rose-hued radio-active glow as the notes the other four would-be-world-rulers had received, it presaged as they had, death for the madman who would plunge the world into war!

★ ★ ★ 3 SCINTILLATING SHORT STORIES ★ ★ ★

Disappearing Sam.....by R. R. Winterbotham 62

How could even the vast resources of the famous Interplanetary Police be a match for a super-scientific criminal who knew how to make himself invisible?

Dust.....by Lloyd Arthur Esbach 91

In bringing to Earth this vast store of radium, with its infinite power for good and evil, would Jerry Blaine be fostering the eternal salvation of mankind—or speeding mankind on to ghastly self-annihilation?

Lightning Strikes Once.....by Harl Vincent 100

In Kerdell's words, it was the focussing of a projector so as to direct a slender beam of energy to one of the cold air layers above the earth—in Mary May's words, it was murder!

★ ★ ★ DEPARTMENTS ★ ★ ★

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Today, after 7 months of study, I have received one promotion and two raises in salary—sufficient to pay the entire cost of the training in a short while. It can easily be seen that I haven't even begun to reap the benefits I expect to get in the next 7 months!

T. G. Jr., Tex.

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D. E. W., Idaho

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W. A. S., Ky.

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R. M. B., S. D.

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T. F. F., N. Y.

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H. A. S., S. D.

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V. C. G., —

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O. L. F., Ill.

They are evidence that success and promotion come fast to trained men!

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Isn't it pretty obvious that maybe so far you aren't going about things in the right way? And isn't it equally obvious that the men of those letters quoted above found a more effective way—through LaSalle accountancy training?

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for those men—and for thousands and thousands like them—**IS ALSO PRETTY APT TO WORK FOR YOU!** That's just common sense.

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Position Age

How could John Harker, a run-of-the-mine engineer, work out theories that would stump the world's greatest scientists? And how could he know that in giving the world a new era, in advancing our progress ten thousand years overnight, he was dooming his own lovely Marcia to the death-spewing ray-sun of far Mercury!

DARK INVASION

By FREDERICK ARNOLD KUMMER, JR.



Huno, followed by his warriors, took in the scene at a glance

NEW YORK was a dream city that spring morning. Golden shafts of sunlight thrust in long lances through the rows of buildings, glinted upon the glass streets of the upper levels. Autogyros, flitting from tower to tower above the great metropolis, seemed bright butterflies in a garden of stone and steel.

To Garth Arlan, standing by the window of his apartment a hundred stories from the ground, this was an everyday scene. Preoccupied, he stared unseeing down at the sweeping circular ramps, the tiers of crowded streets, the

GREAT BOOK-LENGTH SUPER-SCIENCE NOVEL OF AN ORDINARY
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Speechless with terror, Marcia sagged against the wall

unending lanes of traffic far below.

Suddenly Garth drew a crumpled bit of paper from his pocket, smoothed it out upon the window-sill. The already familiar words of the radiogram burned themselves upon his brain.

"Dear Garth. I need help . . . need it in the worst sort of way. I've run across something big. Too big for one man to handle. I have gone as far as I am able, and want somebody with a knowledge of physics and chemistry to convince me that I'm not insane. I can't explain more now . . . it's so utterly fantastic that explanations are



useless. Please, for old times sake, come at once. I promise you won't regret it. John Harker. San Carlo, California."

Garth's lean, sun-browned face was puzzled as he studied the message. Five years since he had seen John Harker. They'd worked together, perfected the Atlas carbon motor. And Harker, on his share of the proceeds, had retired to his mountain home to take life easy, to tinker with his beloved mechanical contrivances, his labor-saving devices. He, Garth, being younger, had taken the opposite course, had come to New York to found the commercial research laboratory which bore his name. And now, after five years, this message.

Garth shook a doubtful head. Harker had been an excellent mechanic, a good, dependable engineer. Gadgets, little time-savers, were in his line. But without training as a physicist, a chemist, it seemed unlikely that he had discovered anything so revolutionary as the mysterious radiogram claimed. And coming at a time when the Arlan laboratories were so busy. . . .

A GAIN Garth crumpled the message, turned to the waste-basket. And again something stopped him. What if the plodding, easy-going Harker had stumbled upon something beyond his comprehension? Might not he, Garth, forever blame himself for not heeding his old friend's message? It was a chance . . . a long chance, but . . .

Suddenly Garth straightened up, snapped a switch on his desk. A girl's bored face appeared on the vivavox screen.

"Yes, Mr. Arlan?" she murmured mechanically.

"Call the hangar and tell them to fuel my plane. At once!" he snapped. "And phone the lab, say I'm called out of town for a few days. That's all!"

A half-hour later Garth stood on the roof-top, watching the attendant check

the motor of his trim little gyro.

"All set, Joe?" he asked.

"Yes, sir." The mechanic nodded. "Sweet as syrup, she runs!"

"Right!" Garth stowed his valise into the luggage compartment, entered the cabin. The motor roared, helicopter vanes beat the air, and the ship shot upward.

One last glance Garth took at the great gleaming city below, then, settling back in his seat, headed west.

The trip to the coast was monotonous. High in the stratosphere, only fleecy banks of clouds were visible below. The controls fixed on robot pilot, Garth lit a cigarette and relaxed, his mind turning once more to the message from John Harker.

Late afternoon was casting its long black shadows when he at last skimmed down through the opaque clouds. Like the hackles of some giant lizard the Sierra Nevadas swept north and south along the coastal plain.

Garth nosed the little ship lower, swung to the left. Harker's place, a time-worn Spanish mission, perched upon the edge of a plateau, was easily visible from the air. Very gently Garth circled downward, settled the gyro a short distance from the house.

The old mission was grey, desolate, just as Garth remembered it from his visits of five years before. Queer, he reflected, that so jocund a man as Harker should make his home in this gloomy, crumbling bat-infested place. Smiling, Garth tugged at the ancient bell-rope.

A girl opened the massive, nail-studded door. Slender, dark-haired, her sheer cellosilk dress clung to the soft curves of her body. Her eyes, Garth noticed, were the color of distant mountains, a misty blue.

"Yes?" she asked. "What is it?"

"I want to see Mr. Harker. He's expecting me."

"Then you're Garth Arlan!" The

girl's manner became more cordial. "Come in!"

Garth followed her across the paneled hallway into the big, book-lined library. The place had not changed since the days when he and Harker had completed the sale of the Atlas motor patents. Garth stretched his hands to the roaring fire on the hearth; it was chilly in the mountains, after sun-down.

"You're the only thing that's new around here." He smiled at the girl. "Might I ask . . . ?"

"I'm Marcia Harker. Mr. Harker's daughter."

"Daughter?" Garth mused. "I remember his mentioning you. Somehow I'd thought of a little girl in hair-ribbons."

"I was away at school when you were last here." She laughed, lightly. "And I'd always thought of you as a white-headed old scientist! That makes us even, doesn't it?" Marcia turned toward the door. "Dad's in his work-shop, downstairs. Just make yourself at home, and I'll tell him you're here."

"Right." Garth turned once more to the fire.

A FEW moments later footsteps sounded in the hallway and John Harker, followed by Marcia, entered the room. A stocky man, Harker, broad shouldered, somewhat paunchy. His nose was red and a fringe of carrot hair encircled his bald head. He looked, somehow, like a shorn Santa Claus.

"Garth!" he exclaimed. "Shucks, boy, it's good to see you!"

"And you!" Garth echoed. "You haven't changed a particle! How does the life of a lazy hill-billy suit you?"

"Fine." Harker bobbed his pudgy head. "Or rather it did until . . . until . . ." He paused, groping for words.

"Until the earth-shaking discovery, eh?" Garth laughed. "What is it, John? A new type bottle-cap, or a used razor-blade disintegrator?"

"It's no joke." Harker's rubicund face became suddenly serious. "It's big . . . tremendous. . . . Those tablets . . ."

"Tablets?" Garth said. "I don't follow you."

"You'll see . . . you'll see!" Harker rubbed his hands nervously. "I tried to work it out by myself, lad, but . . . well, maybe I lost my nerve. Anyhow, I'm not a physicist. How could I, a run-of-the-mine engineer, work out theories that'd stump our greatest scientists?"

Garth's gaze shifted from Harker to the girl. Both seemed intent, bursting with suppressed excitement.

"You're talking in riddles," he said at length. "Suppose you start at the beginning . . ."

"Of course!" Harker turned to his daughter. "Get the tablets, Marcia! They're on the bench in my laboratory. Bring them here!"

She nodded, left the room.

"So" . . . John Harker stuffed tobacco into a blackened briar . . . "what would you say, lad, if I told you I was about to give the world a new era? To bring it the scientific marvels of a mighty civilization, to advance our progress a thousand, ten thousand years, overnight?"

"I'd say you'd been drinking," Garth grinned. "And damn had liquor at that!"

Harker said nothing, preferring to suck at his pipe with the complacent air of a man about to crush all criticism. The tap of Marcia's heels upon the floor of the hall, however, brought him swiftly erect, his eyes glowing.

"Ah, so," he murmured. "Now you'll see! A gift for the world that will never be equalled!"

Marcia carried under her arm four greenish plates, perhaps a foot on each side, an inch thick. As she laid them upon the table, Garth noticed that they were covered with strange markings.

"Look at these tablets!" Harker indicated the green squares. "Tell me what you make of them!"

GARTH picked up the first of the plates, examined it closely. It was, he perceived, of metal . . . but such a metal as he had never before dreamed of. The square was glowing, fluorescent, giving off a dim greenish radiance!

"Odd," he said. "First luminous metal I've ever seen. Very light, too. Weighs less than aluminum, I'd say."

"That's not all!" Harker grunted. "See that nick on the edge?"

Garth found it, a barely perceptible groove on the plate's side.

"That's the best a diamond drill could do before it wore away," John Harker observed. "No tougher metal was ever forged! Now tell me what the markings mean to you."

Garth studied the strange tablet. Engraved upon it were a series of queer, though beautifully executed, line drawings. The first drawing showed four squares lying beside a perfectly angled triangle. In the next, they were within the triangle. The third showed the triangle, still containing the squares, suspended above a cylinder. Below these three ideograms was a much larger one, comprising eleven circles of varying sizes. The first of the circles was vastly larger than all the others combined. From the smallest circle, the closest to the large one, a dotted line ran, connecting it to the fourth in the line. Midway along this dotted line was the triangle, still enclosing the squares. Then a picture of the four squares lying beside the triangle. Next there was one square, enclosing a curious tangle of lines and helixes, while beside it stood an identical pattern but larger and not surrounded by a square. The last picture was another representation of the eleven circles, but on both the second and fourth circles was one of

these jumbles of lines and helixes, while the dotted line connecting the circles was now double.

"Well?" John Harker's voice was eager. "You understand?"

Garth shook his head, glanced at the other tablets. They were covered with the most confusing diagrams and outlines. One of them held a drawing of a jumble of lines and helixes similar to the drawing on the first tablet. All at once realization swept over Garth.

"Good God!" he said breathlessly. "The four squares must represent the tablets! And the eleven circles, the sun and the ten planets! These tablets come from the second circle, if the dotted lines are supposed to indicate their route. The second circle, the one next to the sun . . . that'd be Mercury! And the triangular thing in which they were enclosed must mean a space-ship of some sort . . ."

"Not a space-ship," Harker said softly. "A projectile. Fired from a cannon of some kind . . . the cylinder of the third ideogram. Thus the person who made the tablets shows us how they reached earth. But the rest of the message is more difficult to decipher."

"But . . . but . . .!" Garth gasped. "It's impossible! Such things don't happen! A fake, perhaps, made by some practical joker."

"Even a practical joker would have difficulty in making an unknown, luminous metal," Harker touched the shimmering green tablets. "Listen carefully, Garth!" He sucked placidly at his pipe a moment, resumed speaking. "Often in the last few years Marcia and I have eaten our supper outside, on the terrace. Very pleasant on hot nights. One evening last summer I was sitting there finishing my coffee and talking about nothing in particular, when I saw a flash of light streak by. Brilliant, dazzling, illuminating the entire sky, roaring as it split the air! An instant later there was a tremendous crash and a

quick shock almost jarred me from my chair. Then, in the dim light, we could see clouds of steam, white against the pines, rising from a little pond . . . scarcely more than a pool . . . about half a mile below. Something, hurtling from outer space, had landed within half a mile of this house!"

HARKER knocked the dottle from his pipe. "Well, we figured it was a meteor and decided to have a look at it. Got out a couple of shovels, hoots, flashlights, and headed for the lake. Excited? Just ask Marcia!"

The girl laughed. "We couldn't have been more excited if we'd known what it really was," she said. "A meteor with diamonds or rubies, maybe, in it. Why we'd figured ourselves millionaires by the time we reached the pond! But we didn't dream . . ."

"I'll say we didn't!" Harker wheezed. "All the jewels in the world aren't worth an ounce of this green metal. Well, the lake had shrunk considerably, Garth, by the time we reached it. The shock had smashed a little beaver dam that held back the water and the pond was now rapidly draining. Clouds of steam bung in the air like a fog, vaporized by the heat of the falling object. As the pond emptied, we could see a hole in the muddy bottom. It was about two feet wide and, as we soon found out, plenty deep. We dug most of the night before we uncovered the object at the bottom of the hole. Luckily the water had broken the force of the fall, prevented it from going deeper. A tough job, though, in spite of that, but curiosity kept us going. Meteors don't fall in one's backyard every day.

"The minute we saw what lay in the bottom of the hole, we knew it wasn't a meteor. The thing was shaped like a miniature pyramid. It looked heavy, but wasn't. We carried it up here, to the house, cleaned it off. We were afraid, at first, that it might be some

new kind of aerial bomb being tested by the army air force. But when I saw the green luminous metal the projectile was covered with, I knew it hadn't been made on earth!"

"But how did you get it open?" Garth Arlan demanded. "If the stuff's so tough . . ."

"I'm coming to that," Harker said. "I was convinced that the projectile held a message of some sort. But everything I used, every method I tried, failed to open it. The metal covering seemed impervious. I worked for weeks, nearly went crazy. I began to regret its landing in the pond, now. No doubt it had been made to break open on crashing into a rock, or even earth. But water . . .! Desperate, I began to try dynamite. First a half a stick, a whole one, two. At last, using six sticks, I managed to crack the projectile. Pried it open and found these tablets!"

"Amazing!" Garth stared at the green plates. "Life on Mercury! Have you deciphered them completely?"

Harker nodded, picked up the first plate.

"The symbols you didn't understand," he murmured, "aren't so hard after a little study. The picture of the squares beside the triangle represents taking them out of the container, of course. The picture of the square covered with lines and helixes is a drawing of this plate!" He touched one of the tablets covered with diagrams.

"But in the same ideograph there's a duplicate diagram beside the plate. Larger and not surrounded by a square. I can't understand that."

"Can't understand!" Harker snapped. "Why, it's clear! This pattern on the third tablet is the plan of a machine! And the ideogram showing tablet three beside a bigger pattern of lines and helixes not surrounded by a square means that we are to use tablet three as a blue-print and build such a machine!"

GARTH shook his head, dazed. Intelligent life on rocky, sunburnt Mercury! Furnishing them with plans for a machine! But what sort of a machine? What would it accomplish?

"Incredible, isn't it?" Marcia came forward, smiling. "You see, the last picture shows such a machine on both earth and Mercury. And the double dotted lines mean . . ."

"Two way communication!" John Harker exclaimed, stabbing with a pudgy finger at the drawing. "You understand, Garth? A means of communication between the two planets, a form of radio rather than clumsy projectiles! Think of it, boy! The secrets, the achievements of an advanced race brought to us across space! Television, perhaps, so that by ideographs we can learn their language! In one step we'll advance a thousand, ten thousand years, perhaps. With Mercury to teach us, the earth can be made a paradise, a marvel of scientific progress! What a gift for the world! Communication with another race!" The older man's eyes were brilliant; his voice shook excitedly. "As soon as the machine is finished . . ."

"Then you've started work on it?" Garth exclaimed. "You've figured out these strange plans, diagrams? But how did you know what metals to use, what methods . . ."

"All here!" Harker pointed to the tablets. "Symbols, pictures. . . Took me months of work to decipher them. Studied the tablets night and day. At last it was all clear. I still don't know the theory of the thing, but I can make it as *They* want it made! I'm a pretty good mechanic you know, but no physicist. That's why I sent for you, Garth. If I can learn the theory before I try the machine, I'd feel a lot happier. This business of working blindly from a diagram is sketchy at best. One little slip and it may fail. You'll help me, lad?"

For a long moment Garth stared at the four green tablets, bewildered. Suddenly, very solemnly, he stepped forward, extended his hand.

"My apologies, John," he said, "for those cracks about bottlecaps and razor-blade disintegrators. But . . . I didn't dream. . . ."

"Then you'll help?" Harker said eagerly.

"If I can. Let's have a look at the machine."

CHAPTER II

HARKER'S laboratory was a large stone-flagged room in the gloomy sub-cellars of the old mission. Large astralux lamps suspended from the ceiling flooded it with brilliant, blue-white light, dispelled the creeping shadows of the subterranean vault.

Garth, following Marcia and her father into the room, gasped at sight of the great machine looming across one entire wall. Seldom, he felt, had he beheld so bewildering an array of tubes, of wires, of complicated apparatus. That the communications set was electrical seemed evident . . . but a science far superior to that of earth had conceived the elaborate mechanism, the strange loops and discs of gleaming metal. Like an intricate piece of clockwork, it seemed, centered about a burnished copper helix so fragile, so complex, as to be a veritable cobweb of wire.

"That's it?" he muttered. "But it's impossible, fantastic! A madman's dream! Think, John, why should so advanced a civilization use such a complicated apparatus? Simplicity's the mark of a great work."

"That's what I thought, too," Marcia smiled. "But Dad explained it to me. You see, their own sets are probably re-

fined, compact, embodying many principles of construction far beyond us. Just like . . . well, for instance we know that four times four is sixteen. But if we tried to explain it to a child, we'd have to draw four apples four times. Each step in detail. You see?"

"So this is a simplified set, eh?" Garth chuckled, took off his coat. "Well, I'd hate to try and work out an advanced one! Looks like we've got a job ahead!"

In the days of toil that followed, his prediction was realized. Blindly, with no conception of the abstruse principles involved, Harker had continued his work, guided only by the diagrams on the green Mercurian tablets. Hour after hour, patiently fashioning curious bits of mechanism, fitting them with skillful fingers into position.

Now, while Harker labored, Garth studied the diagrams, the ideographs, seeking the theory behind them. And always the explanation eluded him. The pyramidal projectile lay in the laboratory, but his attempts to analyze the greenish metal were futile.

Utterly absorbed in his work, time soon lost its meaning to Garth. There were meals, be remembered, periods of sleep between the long hours in the laboratory. Yet even through the fascinating problem of the communications set, Garth was conscious of Marcia Harker's vivacious charm, her slim dark beauty.

As hit by bit the weird mechanism grew, their thoughts turned more and more toward the tiny dark planet so near the sun. That Mercury, an arid hit of rock less than three thousand miles in diameter, should be able to support life, bewildered them. And what form of life could possibly exist on a planet that had no atmosphere to shut off the sun's cruel rays, that had a temperature estimated at 195 degrees Centigrade? How could there be life on such a world?

Sometimes Garth believed it all to be a cruel joke, but always sight of the unknown luminous metal reassured him. Completely baffled in his attempts to solve the secret of the machine, he now joined Harker in blindly following the diagram on the tablets, hoping that communication with the first planet would enable them to learn the set's principle.

Occasionally, as he and Harker hammered into shape some stubborn bit of metal, they would discuss the probable means of communication. So far they had built nothing resembling television screens or radio speakers. Nor did the two dotted lines of the tablet, linking Mercury and Earth, offer any further explanation as to how the apparatus worked. It might, Harker declared, even be thought waves projected in some strange manner across the void. Never dreaming of the terrible truth they drove themselves mercilessly to complete the Mercurian machine.

IT was a full month before the great receiving set was finished. Marcia and Garth were standing by the door, watching, as Harker fitted the last piece into place.

"Done!" He stepped back, wiped sweat from his ruddy forehead. "Whether the work of a superior intelligence or of a madman, it's finished!"

Marcia's voice, when she spoke, was hushed.

"Millions of miles of space," she whispered. "Dark limitless voids of the cosmos . . . and we may bridge them. Thought, messages, from another world. . . ."

For a moment the girl stood silent, gazing at the strange machine. The old mission was tomb-like, except for the sighing of the wind, the faint rustle of the pines outside.

"I . . . I'm almost afraid," Marcia murmured. "We know so little about it all!"

"Probably won't work," Garth laughed reassuringly. "Things never do the first time. And it may still be a joke of some sort. Shall we try it, John?"

Harker squared his shoulders.

"Ready?" he asked softly.

"Ready . . . for anything," Garth replied.

"Here goes, then." Very deliberately Harker drew back a switch.

As the switch clicked shut, spinning, humming life animated the mass of metal. Luminous blueish light flickered through tubes, snapped across spark-gaps. Moving parts began to vibrate until they seemed only dim blurs, and a smell of ozone filled the laboratory. Power . . . power from across the cosmos emanated like a tangible thing from the machine. Strange supernal forces screamed like tortured souls, filling the house until it seemed to shudder. Energy, raw, stark, terrible, surged through the dank subterranean crypt.

Then all at once a change took place. Garth could feel, somehow, another presence in the laboratory, an alien entity, from the dim reaches of time and space. Harker's breathing was labored, his eyes very bright. Marcia was like a wax figure.

Suddenly Garth felt the girl's fingers dig into his arm.

"Look!" she whispered. "Look!"

Garth stared, incredulous. Before the great copper helix something was taking shape . . . something miasmic, spectral, like a tenuous column of mist. With each instant it grew, solidified, assumed definite form. Marcia gasped, swayed slightly. The shape was becoming vaguely human!

Dense, now, the figure, less opaque with each moment. Sight of it staggered Garth's senses. Of less than human size, it was perhaps five feet tall, yet built along terrestrial lines. Large, bulging, the man's head, and his eyes were many-faceted like those of an in-

sect. Hard glistening scales took the place of skin and a metallic tunic fitted loosely over a wiry, muscular body. A purple cape, emblazoned with a curious triangular device, hung from his shoulder. Completely solid now, the small figure took a step forward.

John Harker swallowed hard; his spatulate fingers shook.

"I . . . it . . ." he could find no words.

"You are surprised?" The dark apparition's voice was toneless, utterly mechanical. "Not such intelligent beings, apparently, as we had suspected." The glittering eyes swept the laboratory, noting the equipment, the apparatus. "Rudimentary science. Well, so much the better."

"Who—who are you?" Garth could scarcely recognize his own voice.

"I AM Huno, a member of the Than-tors . . . nobles, I believe you call them . . . of Mercury," the bizarre little man replied evenly. "Gods he praised, one of our projectiles reached here at last. A few hundred more years and our planet might have been doomed."

"Mercury!" Marcia shook her head. "But you speak English!"

"And why not? For years our sensitive radio equipment has brought us your speech. From your radio broadcasts we learned of the planet earth, tried to communicate with it. But your crude receivers could not pick up our messages, so we were forced to try projectiles."

"But . . . hut . . ." Harker gasped. "How were you able to cross space, reach earth?"

"You do not understand the machine which you built, operated to bring me here?" Huno smiled, his dark face contemptuous. "But surely you realize that all matter is basically energy. Even your civilization has discovered that . . . has learned to transmit images,

sound. For centuries we of Mercury have known the secret of transforming matter into energy . . . electro-magnetic vibrations . . . reassembling it in the form of matter once more, at the desired point. Yet to leave our planet, reach Earth, it was necessary to have a receiving station such as this at our destination. Since it became apparent that we were faced with extinction, we have worked to perfect projectiles which could withstand a trip through space, convey plans for a receiver to another planet. Tablets with simple ideograms were made, for though we had learned to speak your language via radio, the extremely short range of your television broadcasts prevented us from learning your written symbols. The initial velocity would have killed us, had we attempted to cross bodily in a projectile, would have smashed an energy-receiving machine; yet we believed that if a race of sufficient intelligence were to find our instructions, follow them to make a receiving set, we would be able, in the form of pure energy to cross space, just as the sun's energy, the cosmic rays, reach your earth." Huno paused, toying with the disc that hung about his neck. "For many years we tried to send our projectiles to Venus, but life there, if it exists, is too backward to duplicate our machines. And Mars had little water . . ."

"Water?" Garth repeated. "But . . . you mean . . . I don't understand . . ."

"Naturally. But you will, shortly." Huno turned to the receiver, his horny fingers making delicate adjustments of the complex mechanism.

Garth watched him, still dazed by it all. The tablets, Harker's story, these had seemed plausible. The thought of communication, voices leaping the void to link two planets, had been within the realms of credibility. But this. . . ! A man from Mercury, materializing out of thin air! The magnitude of it

stunned him.

"John!" he cried. "This is bigger than anything we'd dreamed of! When we tell the world what we've accomplished. . . ! Run upstairs, Marcia, call the newscasting stations! Scientists will want to . . ."

Huno the Mercurian spun about, his eyes like polished anthracite.

"You will make no mention of this, yet," he said coldly. "We are not ready for earthmen to learn of our presence. They will know soon enough."

A STRANGE note of menace in the mechanical voice brought a frown to Garth's face. What did the Mercurian mean? And why, instead of rejoicing that the gap between the two worlds had been closed, did he seem determined to keep it a secret. Garth glanced at his companions. Harker stood rigid, like a man in a trance, his plump face drawn in bewildered lines, his lips sagging. Marcia stood with her back to the wall, arms outflung; there was mute terror in the depths of her blue eyes.

Garth set his jaw firmly, turned to the small dark figure before the machine.

"Look here!" he said sharply. "Let's get this straight! You send a projectile, with instructions as to how to build this receiving set. And now you're here, you act as though this were all part of a plot against us! Against Earth! I'd like some explanation as to why you don't want the rest of our people to know of your appearance!"

The dark Mercurian turned from the machine, an expression of annoyance on his saturnine face.

"You," he said softly, "are a fool! I have no time to waste explaining our plans to a lower form of life! Already our armies are waiting!"

"Armies!" Harker burst out. "Good God! You mean . . ."

"I mean that I am the first of many."

Huno said impatiently. "Why do you suppose we went to the trouble of entering into communication with barbarians like you? For idle curiosity? Within a few moments the vanguard of our armies will be here, to commence the work of subjugation . . ."

"No!" Garth cried. "You . . . you can't! We . . ."

"Your emotions are stupid," Huno observed. "Scientific efficiency . . ." He broke off, leaped to one side as Garth sprang furiously toward him.

Fists knotted, seized by a sudden berserk rage, the earthman hurtled forward. With amazing swiftness Huno avoided the flailing blows, drew a curiously-shaped tube from his pocket, levelled it at his opponent.

"Garth!" Marcia screamed. "Look out!"

Instinctively Garth jumped aside, nor was he a moment too soon. A pale violet beam shot from the tube, leaped across the room. A blinding flash of light, an acrid smell of ozone, filled the laboratory. A section of the wall the size of dinner-plate crumbled into dust under the blasting force of raw, unleashed energy!

"Good God!" Harker slumped against the workbench. His voice was dull with horror. "And I—I have loosed *this* upon the world!"

Huno, apparently satisfied with his demonstration, once more thrust the little gun into his belt.

"You realize, I trust" . . . his many-facetted eyes flicked toward Garth . . . "the futility of such primitive assaults. Any further attempts will render it necessary for me to destroy you!"

An insistent humming from the big receiving set drew his attention. Garth Arlan, his rage suddenly giving way to hopelessness, stood rooted to the spot, staring at their strange visitor. Behind him he could hear Marcia's spasmodic sobbing, John Harker's labored breathing.

ALL at once the Mercurian straightened up, tugged at a switch. Light glowed through tubes, crackled in arcs of flame across the sparkgaps. Again that surge of power, that whine of machinery.

Suddenly beads of cold perspiration broke out upon Garth's forehead. Dim, shadowy figures, were taking shape before the machine! Marching from it in close-knit ranks, growing denser, less opaque with each second! The room was crowded with them now, wiry, dark-scaled men of Mercury, in their loose metal tunics, their flowing purple cloaks!

About their necks hung ornate medallions such as Huno wore, and energy guns were suspended from their belts. In their hands the warriors carried small box-like machines, not unlike portable terrestrial radio sets, each box surmounted by a gleaming helix identical with the one on the set Harker had built. Like the dragon's teeth of ancient legend, Garth thought . . . wherever one of these warriors went, a dozen, a hundred more would spring into being.

Fully fifty of the dark Mercurians crowded the laboratory now, standing in line like mechanical robots. Marcia, staring at them, found it hard to believe. A nightmare, she whispered, a mad, nonsensical nightmare! These scaly, jewel-eyed creatures here in this familiar workroom! And outside the sun would be shining, the birds singing, while in busy San Francisco, ten miles away, men worked, laughed, went about their daily tasks, unconscious of the storm that was soon to break!

Huno, staring at the row of warriors, smiled complacently.

"Captain Zagar!" he snapped.

"Yes, Excellency." The leader of the detachment bowed. "May I convey the congratulations of all Mercury on your magnificent achievement? Already the armies are assembled, wait-

ing. And we have each, in accordance with your instructions, brought receiving sets. You have only to speak and the conquest will begin."

"No hurry," Huno murmured. "It will be better first to learn something of the land, what arms the earthmen possess. You have thought-helmets?"

Zagar nodded, snapped an order.

Two of the warriors stepped forward, carrying gleaming dome-shaped headpieces of copper, surmounted by small circular discs.

"These two." Huno indicated Garth and Harker.

At once several Mercurians seized the two men, held them motionless while the metal domes were fitted over their heads. Zagar adjusted dials and Garth heard a flat, mechanical voice emanating from the disc atop the helmet. His thoughts! Translated into words to guide and inform the listening Mercurians . . . betray his own people!

In vain he tried to control his mind, to keep it on meaningless subjects. It seemed as though a mighty, inexorable will held his brain in its grasp, forcing him to answer a thousand unspoken questions . . . reveal his inmost thoughts.

From the disc atop Harker's helmet a similar toneless voice issued, telling of terrestrial armaments, methods of communication, social and economic life. Describing the region about San Francisco, picturing the west coast, detailing roughly the army posts, the points of defense.

AT length, after an hour's cross-examination, the gleaming helmets were removed. Garth felt dazed, as though he had been concentrating with all his energy upon some stubborn problem. Tired, somehow listless, he stared at his captors.

Then Huno was speaking to Zagar.

"With the information we have just

obtained it will be easy. You and several of your men are to remain here. The rest of your force will scatter about this section of the country to cover what the terrestrials call the West Coast. Go as far inland as the place they termed Salt Lake City. That should include an area with sufficient human life for our purpose. Also it faces on the great body of water. I believe" . . . Huno paused, smiling . . . "that one sharp lesson, a demonstration of our power, will induce these earthly beings to surrender without a struggle."

"Exactly, Highness." Zagar's dark face reflected his superior's thin smile. "One sharp lesson. I am to act without consulting you further?"

"Why not, Zagar?" Huno's scaly fingers clicked against the switch of the communication machine. "You have your orders. I wish to return to Mercury, report our success to the Council."

"As you say, Thantor," Zagar bowed. Then, catching sight of Garth and Harker, secure in the grip of several Mercurian warriors. "What of these?"

"Keep them. Their thoughts will be useful in solving any problems that come up concerning the earthmen, or the location of strategic points."

"And the female?" Zagar glanced at Marcia, a tragic figure huddled against the wall.

Huno studied the girl, his brilliant eyes appraising.

"I shall take her with me as our first captive, a specimen of this strange race. Bring her here!"

Two of the impassive Mercurians led the girl before him. The pale, defiant beauty of her, filled Garth with sudden fury against his captors.

"No!" he cried, struggling to break free. "Marcia! They can't . . . !" A rain of blows from his guards silenced him, beat him to his knees.

Dazed, Garth watched them drag Marcia before the machine. Huno's

wiry figure was bent over the complicated switchboard adjusting dials, reversing terminals for transmission.

All at once he straightened up, faced Zagar.

"All success, Captain, in your campaign. There can be no excuses if you fail." He stepped forward, seized the girl's wrists, forced her beneath the shimmering helix.

"Marcia!" A groan broke from John Harker's lips. His daughter's slender figure, held immobile in the Mercurian's inexorable grasp, was beginning to fade from view!

"Garth!" The girl's voice was faint, a cry from beyond the rim of existence. "Garth . . . !"

She was no more than a faint shadowy outline, now, like Huno beside her. A phantom shape, with dark, flowing hair, blue eyes that were terrifyingly dim. Once again Garth thought he could hear that agonized voice repeating his name, but the space beneath the great helix was empty. Marcia was gone, transformed into energy, electromagnetic waves, to be hurled across a million miles of space to barren Mercury!

GARTH, slumped upon the laboratory floor, felt sudden hopelessness. What use to struggle against such mighty forces, such cold inhuman intellects? It seemed futile . . .

Zagar spoke, harshly.

"You have found a place, Tolla?" he demanded.

"Yes, Captain." One of the warriors, returning from a search of the old mission, snapped to attention.

"Good." Zagar nodded. "Take the two terrestrials there, guard them carefully. No word must escape until we are ready to strike. You others will proceed to your posts, avoiding the earthmen, killing all who see you." He drew a list, compiled from Garth's description of the country, from his

pocket. "You, Hantu, to the coast, to the place called Los Angeles. Kaban, to the north, to . . ."

Mercurian guards, stolid, expressionless, dragged Garth and Harker from the room. The former, stunned by savage blows, staggered uncertainly; the latter, racked with grief at thought of Marcia's fate, was an abject figure.

Through passages they were led, along the maze of rocky galleries beneath the old mission. Tolla paused before a small cell, windowless, dark.

"In there!" he snapped. "I'll remain on guard."

CHAPTER III

THE little cell was shallow, hardly more than a closet. Garth, regaining his strength, staggered erect, strove to pierce the stygian gloom.

"John!" he whispered. "There's no other door to this room?"

"None." Harker's voice was dull with despair. "What if there were? We . . . earth . . . has no chance against these fiends. No escape, Garth, for mankind."

"You're wrong, John." Garth's voice was alive with excitement. "Don't you see? If we could get out of here, warn earth, there'd be a chance! Bombing planes, dropping down with cut motors, blasting this place before the invaders can scatter! Destroying the transmission machine to prevent others from coming across! We've got to get away, man! Got to!"

"But there's no way out of this storeroom! None! The door's half an inch of oak, and a guard outside . . . !"

"We'll see! Perhaps some forgotten tool, some loose board may help! Come on!"

Carefully, inch by inch, the two men went over their prison, groping through

the darkness with searching fingers. The little room was empty. Dust-laden shelves, stone walls and floor, some scraps of mouldering rags . . . these and nothing more.

"You see?" Harker muttered. "It's hopeless, Garth! No possible way of escape . . ."

"Wait!" Garth exclaimed. "The ceiling!"

Standing on tip-toe, he ran an exploratory hand over the rough, open-beamed ceiling. All at once his fingers encountered an electric wire, leading to an ancient light-socket.

"Say!" He snapped the switch reflectively. "This closet is wired for electricity!"

"It was used as a storeroom by the people who lived here last," Harker explained. "They wired the entire mission, renovated it. But I don't see . . ."

"Neither do I, just now. But I'm beginning to get an idea. A hundred and ten volts, of course, alternating current. Enough to knock an earth-man kicking, though I don't know about a Mercurian."

"What are you driving at?" Harker asked curiously. "There's no way I can see to break down the door!"

"Guess not." Garth was deep in thought. "Let's suppose you had a key to that door. How would you go about opening it?"

"How? Why I'd unlock it, turn the knob! How else?"

"Well, go over there and pretend you're doing it. Just go through the motions."

Mystified, Harker did as he was requested. A shadowy figure in the darkness, he reached up with one hand, holding an imaginary key, turned it before the brass lock. Then, his hand still raised before the lock, he dropped the other to the knob, twisted it.

"There!" He stepped back. "But just what could that possibly prove . . ."

"Plenty." Garth ripped the socket

from the end of the wires, dragged them through the staples that held them to the ceiling. Very carefully, to avoid placing himself in circuit, he stripped the insulation from their tips, leaving six inches of copper exposed.

"A LL right." He turned to the door. "Remember how you 'opened' the door? First you unlocked it, then, your hand still on the key, you tried the knob. A brass knob, too, you'll notice. In that instant the door would be unlocked and you'd have a hand on both key and knob. Be in circuit, if there was a current. And there will be!" He hooked one wire into the lock, the other over the knob. "Now . . . when our guard comes to open the door . . ."

"Ah!" Harker muttered. "I'm beginning to understand!"

Garth nodded.

"He'll still be holding the key when he touches the knob. Then, unless these devils are insulated, he'll get the shock of his life. Worth trying, anyhow!" He groped his way toward the wooden shelves. "Rip a few of these down, John, and he'll think we're attempting to break out! That'll bring him running!"

Harker nodded, gripped one of the shelves, tore it with a splintering crash from the wall. The ripping loose of a second shelf brought a sound of footsteps beyond the door, the rattle of a key.

Then, suddenly, an agonized groan sounded in the hallway outside.

"Worked!" Garth exclaimed. "Here!" He tore the two wires from their terminals, pulled at the door. Unlocked, it swung open.

Lying upon the floor was their wiry Mercurian guard, his dark face suffused with pain, his insect-like eyes snapping in fury. Stunned by the shock, he was groping for the energy-gun at his belt.

Hurting forward, Garth pounced upon the scaly-skinned warrior. With

strength surprising in his small frame, the guard fought back, his horny fingers tearing like claws at Garth's face, digging bloody furrows across the earthman's cheeks.

Harker, plunging in to help his companion, was met by a driving kick that sent him reeling off balance, toppled him to the floor.

Garth was amazed at his opponent's strength. The blows he rained into the guard's face seemed only to bruise his fists, make little impression upon the Mercurian's tough, scaly skin. Blood from Garth's torn cheeks dripped upon the ancient flagstones . . . he began to pant from exertion. At last, in desperation, he lifted the struggling warrior, slammed him back against the stone flags. With a sharp crack the Mercurian's head struck the floor, and his body went limp.

"Tough . . . tough egg!" Garth gasped, staggering to his feet. "You okay, John?"

Harker was sitting upon the floor, gripping his ankle. At Garth's words he attempted to rise, then, wincing with pain, sank back.

"Sprained ankle," he muttered. "Don't mind me, lad! Go on!"

Garth's gaze swept the gloomy passageway. There were no windows, and to reach the cellar door leading to freedom he must pass the laboratory in which Zagar and his men had remained.

He stood still, listening. A murmur of voices drifted along the corridor, distant footsteps, the hum of machinery. Their escape from the storeroom, apparently, had not been overheard; the Mercurians were busy with plans for conquest. But to leave the house, he must either reach the guarded staircase, or pass the laboratory, gain the cellar door leading outside. A desperate gamble either way. Burdened with Harker's heavy weight it would be impossible.

"Can't leave you here," he mur-

mured. "If our planes bomb this place . . ."

"YOU'VE got to go, Garth," Harker exclaimed impatiently. "It's not just me! It's earth . . . mankind . . . all we've struggled for these ten thousand years! What's one life when we're faced with the end of our civilization? Go on! Hurry!"

"Right!" Garth gripped the older man's hand, tightly. "Good luck, John!"

One last look at Harker and he set out along the passage, cautiously, toward the laboratory. Winding among the dusty corridors that lay beneath the old mission he at length saw light ahead, moving figures.

Zagar and several of the dark Mercurians stood in the murky gallery. Snatches of conversation drifted along it. Amidst the hissing of sibilant Mercurian, he caught the English words "slaves to our people . . ."

Garth went tense. Slaves! But how could they expect terrestrials to live on burning Mercury? Already, perhaps, Marcia. . . . He choked with sudden emotion.

Zagar, thumbs hooked over his belt, dark face aglow, was talking excitedly of the "Pacific." What was it about water that awoke such interest among these Mercurians? Huno, also, had mentioned it, as a matter of importance.

Crouched in the darkness, he strained his ears. All at once a group of warriors issued from the laboratory. Cloaked in long mantles, faces hidden by curious hoods, they seemed living shadows.

Zagar nodded, gave crisp orders. Silently the men bowed, left. Garth stared at them, puzzled. Were these a group of the advanced guard, leaving to take up positions about the countryside? If so, his efforts would be in vain. Burning with impatience, he remained motionless, waiting for the re-

maining Mercurians to move away.

After what seemed hours of waiting, Zagar and his followers walked across the hallway, reentered the brilliantly-lighted laboratory.

With infinite caution Garth moved forward along the corridor. It seemed impossible that he could pass the entrance of the workshop unobserved, reach the heavy wooden door that led to freedom.

For a moment he considered making a dash for it. Memory of Huno's deadly energy gun checked him. No way of outrunning the destructive violet rays. Very softly, testing each step before taking it, he inched along the passage.

The harsh toneless voices of the Mercurians were clear, now, distinct. He could hear Zagar speaking, grunts of assent from the others. Keeping always in the shadows, he crept toward the door.

Garth was abreast of the laboratory now. Within it, the purple-cloaked warriors were bent over a table. A map, doubtless drawn from his description of the countryside, lay before them.

All at once a loose pebble crunched beneath his foot. Zagar looked up. Frozen in a patch of shadows, Garth held his breath. His heart was thumping, so loudly, it seemed, that the dark, scaly-skinned commander must hear it. For a long instant Zagar's brilliant, glittering eyes probed the darkness, then his gaze fell once more to the map.

Garth gave a silent prayer of thanksgiving, slid toward the door. One more minute! One more minute and he'd be free, able to spread the word of this incredible invasion from space!

A LAST step he took, reached for the latch. As he did so, his heart skipped a beat. Footsteps were sounding in the laboratory, headed toward the corridor!

No chance, now, to escape observation. With frantic haste he tore at the latch of the massive door.

A shout of rage echoed through the passageway. Zagar, his face contorted with fury, stood in the entrance of the workshop, energy gun in hand.

As the Mercurian fired, Garth dropped to the floor. Struck by the stream of purple destruction that jetted from the gun, the door was blasted to bits. Then Garth sprang up and clutching a heavy piece of timber, buried it at the infuriated Mercurian.

With crushing force the billet of wood struck Zagar, stretched him upon the floor. Garth dove through the splintered door, raced up the stone steps that led to the garden. For a moment he considered heading for his plane, parked nearby, then, realizing what a perfect target the little silvery ship would make against the dark sky, he plunged into the woods.

Angry cries were echoing through the boughs behind him, and purple rays cut the darkness. Garth, running like mad, could hear the crash of falling trees, caught by the deadly beams of unleashed energy. Half-rolling, half-sliding, he skidded down the steep slope. Behind him the woods were a hell of lambent violet flame.

Garth plunged on, forcing himself to superhuman efforts. At length the purple glare died away in the distance. He paused for breath, wiped his bloody, sweaty face. Far below, the lights of the great bridges danced like splotches of shimmering molten gold upon the dark waters of the Bay.

Panting, Garth beaded toward them.

Pale dawn was just tinting the upflung towers of San Francisco when Garth entered the city. A dream place, it seemed, all rose and saffron, its mighty sky-scrapers veiled in morning mists.

Wearily Garth toiled up a circular ramp to the glass-paved streets of the

second level. His every muscle ached and he felt as though he were living in some mad delirium.

The city was still, at this hour, like a place of the dead. As he walked the silent streets, doubts crowded Garth's mind. It seemed impossible, somehow, that ten miles from this great metropolis, so familiar, so everyday, there were strange beings from another planet, planning its domination.

A soft-motored milk-truck, purring from door to door, passed him. Its driver stared with curious eyes at Garth's tattered, blood-stained figure. Garth shook himself. He had come to warn them, spread the alarm. But . . . but . . . how?

How to go about it? Should he shout, pound upon doors, awaken the sleeping people? If he did, who would believe him? Would he have believed it himself; three days ago, had he been awakened with warnings of an invasion from space?

Sudden desperation seized him. They *had* to believe! Had to, or meet inevitable destruction! Even now the dark hosts were assembling, awaiting the word to pour across the void to conquer earth.

A workman, dinner-pail in hand, was approaching him. Garth ran toward the man, reeling from fatigue.

"You . . . you've got to help me," he exclaimed. "Spread the word! There . . . there're beings from another world up in the mountains! Preparing to attack! Unless we act at once . . ."

THE laborer's face hardened.

"Nuti!" he jeered. "Where's your horse, Paul Revere!" Grinning, he tried to brush past.

"But . . . Good God, man!" Garth seized his arm. "It's true! Don't you see? True! Strange creatures from Mercury . . ."

"Sure, sure." With a soothing man-

ner the workman shook off Garth's hand. "I'll go tell the mayor right away!" Chuckling, he strode down the street.

Shoulders sagging helplessly, Garth gazed after the man. A bustling housewife appeared on the steps of a house, stared at him, clutching her milk-bottles.

"You better go sleep it off, young fellow," she shrilled. "Land sakes! In broad daylight, too!"

Without a word Garth turned away. It seemed hopeless. But if he could reach someone in authority, someone with sense enough to listen . . .

Heavy footsteps sounded behind him. The workman, accompanied by a burly policeman, was returning.

"That's the guy!" The laborer nodded. "Crazy as a coot! He's got no business being allowed loose in the streets!"

The patrolman dropped a heavy hand upon Garth's shoulder.

"All right, you," he growled. "What's all this about terrible creatures, and mugs from Mercury?"

As plausibly as possible, Garth told his story.

"You don't have to believe me," he concluded desperately. "If you go there, you'll see for yourself! Can't you understand . . . ?"

"What!" The policeman gave an elaborate picture of horror. "I'll call headquarters right away!" He unhooked a small pocket radio from his belt, spoke softly into it.

Garth, listening, heard the words "insane," "ambulance." With a quick gesture he broke away from the patrolman, dove into an alley. Shouts, the pounding of feet, sounded behind him. Twisting, dodging through the maze of streets, he at length shook off pursuit.

The city was waking up now. Traffic rumbled through the main arteries, early pedestrians were beginning to appear on the sidewalks. Garth shook a

dismal head. Hunted! First by the dark, merciless invaders, now by his own people! If he could reach Western University, though, there was a chance. Men who knew him, knew his reputation as a scientist, would listen . . . if it were not already too late. Wiping the dust, the caked blood, from his face, he headed north.

Garth was just crossing a busy square on the upper level when the tear-shaped little police car drew up beside him.

"That's the man!" a policeman cried, climbing out.

No chance to escape, now. The policeman had a secure grip on his arm.

"Come along, young fellow," he said, grinning. "We're going places!"

IT was at precisely this instant that Garth saw the small dark figure emerge from the shadows of an alley. Muffled in a long dark cloak, the man's face was hidden, but his queer garb drew the curious glances of the passersby.

"Look!" Garth shouted. "There's one of them! Get him! Quick! He's a Mercurian!"

The patrolman stared at the small figure, frowned. There was something strangely inhuman in the shrouded man's appearance.

"Wonder who that guy thinks he is, Hank?" he muttered. "Napoleon?"

The driver of the car glanced carelessly at the man in the alley.

"Some screwball," he shrugged. "What the hell? We can't arrest him for wearing a black cloak. Let's take care of *this* nut first. . ."

The driver's voice trailed off in a bewildered mutter. The small dark figure had drawn a box from beneath his robes . . . a box surmounted by a shining coil of wire. And a narrow beam of light was streaming across the pavement!

A crowd of pedestrians had gathered about the cloaked figure, were eyeing

the queer little box, speculating as to the type of advertising stunt to be pulled off. Garth groaned, knowing what was to follow! A smaller, portable receiving set . . . to bring in more dark invaders. . . !

All at once a panic swept the crowd. Shouts, screams, echoed across the square as they broke, ran pellmell from the little box.

"Jeeze!" The policeman dropped Garth's arm, stared with bulging eyes at the incredible spectacle.

Shapes were taking form in the narrow beam of light. Dark, scaly figures in metal tunics, purple cloaks! Fierce-eyed warriors of Mercury, serried rows of them, marching out of nothingness!

Suddenly the shrouded figure threw off its mantle, straightened up, energy gun in hand. The shadowy warriors were firm, solid, now, standing in close ranks, awaiting orders. Screaming, fighting to break away, the crowds of terrestrials fled to escape from the square.

Hissing, sibilant commands cut the air. The dark invaders broke ranks, their energy guns crackling.

Instinctively Garth dropped to the pavement. The street was an inferno of purple flame. He saw one of the policemen fire his revolver, saw a Mercurian stagger, then, protected by his metal tunic, press on.

Jets of violet flame cut the policemen down, transformed the square into a charnel house. A stench of charred flesh hung heavy in the morning air; blackened, mangled corpses littered the ground. And still the Mercurian fighting men poured in endless columns from the frail beam of light!

Buildings were beginning to crumble, collapse, as the energy guns played upon them. A rumble of falling masonry, the crash of undermined structures drowned out the screams of the dying. Clouds of dust swept like a yellow fog over the square.

It was to this dust that Garth owed his life. Hidden by the swirling clouds, he scrambled to his feet, set out on the run along a small side street.

San Francisco had suddenly become a city of terror. Baps of stolid Mercurians, utterly emotionless, moved along the streets, methodically raying every human figure, reducing tall buildings to mere heaps of rubble.

GARTH ran blindly, seeking only escape. Huno's words, "One sharp lesson," had not been mere bluster. Battered by the rain of falling stone, stumbling over limp, sprawling bodies, he headed for the outskirts of the city.

Other terrestrials, fear-maddened mobs, fought wildly to win freedom. A woman, a baby in her arms, brushed him aside like an enraged tigress. Cars, trucks, heedless of human life, rocked and swayed along the streets, leaving a trail of inert, bloody bodies behind. A plane, caught by the lashing rays, fluttered like a wounded bird to the ground.

Garth shouldered his way through the crowds of refugees, plunged along the narrow streets in frantic haste. Glancing downward through the glass paving, he could see similar panicky mobs on the levels below. Kaleidoscopic pictures stamped themselves indelibly upon his mind. A woman crouched, weeping, over a charred mass of rags that once had been a man . . . an old beggar, stumbling to his knees, trampled to death by fleeing feet . . . a child laughing, clapping its tiny hands in glee at the excitement.

Destruction had spread over the entire city. On all sides could be heard the crash of falling buildings, the shouts of fear and pain. All at once Garth saw a purple flash beside him, felt searing heat as a wide swath appeared in the ranks of the fugitives.

Instinctively, he dove for a ramp. Two of the glittering-eyed invaders stood calmly spraying the crowd as

though watering a garden . . . a garden of death.

Down the circular ramp Garth slid. Suddenly it shuddered, swayed, as the street level above gave way, crashed in a rumbling, splintering mass of destruction. Dazed he picked himself up, clambered over the mountain of debris, staggered on.

Running, running, endlessly. He was a robot, now, no longer conscious of his surroundings, of time or place. At length, as though awakening from a dream, he became aware of grass beneath his feet, of tall trees on all sides. The sun was high in the heavens and far below, to the south, the city lay wreathed in a pall of smoke, of dust. Utterly exhausted, Garth threw himself upon the ground, fell into a deep, dreamless sleep.

CHAPTER IV

THE hills were ablaze with wildflowers, sweet with the smell of pines. Spring had flung its green mantle over the long, sweeping slopes that led to the sea. Here and there, however, the fields were marred by dark patches, twisted scraps of metal, surrounded by charred grass, scorched trees. Gyros, from the terrestrial army, brought down in flames by the energy guns of the invaders. Further along the hillsides there were scattered tanks, dozens, hundreds, of charred, sprawling hodies, while the shores of the Bay were littered with fragments of steel, other wreckage.

Garth Arlan crouched under the big oak tree, wolfing down a handful of hard, green grapes. Tattered fragments of clothing hung upon his emaciated frame and a heavy beard obscured his regular features. His hollow eyes were fixed on the blackened heap of rubble that had once been San Francisco.

Strange changes had come over the city during the past month. Dome-shaped buildings had risen with incredible speed over the mounds of debris, and a gleaming conical tower, fully five hundred feet high, thrust like a small mountain-top above the Bay. This structure puzzled Garth. Completely surrounded by water, it was connected by a broad causeway to the shore. Swarms of Mercurians far below, like tiny ants, crossed and recrossed the causeway, carrying queer machinery to and from the tower.

Garth bolted another of the unripe grapes, began scraping a fragment of belt-buckle against a rock. Suddenly he dropped the buckle, went rigid. A crackle of underbrush, a rustle of grass behind him! He snatched up a heavy club lying at his side, crouched against the bole of the great oak, every muscle tense.

The crackle of twigs grew louder, and a man's tattered figure emerged from the thicket. A terrestrial, a giant of a man, his chest covered with black hair; his face, though worn by privation, clean-cut, intelligent.

"Hello." He glanced at Garth, poised, club in hand. "Think I was a Merc?"

Garth nodded.

"Better learn to walk more softly," he said. "We're in the habit of hitting first, and finding out afterwards."

"I haven't been in the hills long." The big man threw himself wearily to the ground. "Got any food?"

Silently Garth handed him the remains of the grapes. The stranger munched them wryly.

"Lousy," he commented.

"I've been living on them for a month, mostly." Garth picked up the broken belt-buckle, commenced scraping it against the stone once more. "If I ever work this thing into a fish hook, I'll really eat."

"But the smoke of cooking . . ."

"Raw fish aren't bad when you're hungry," Garth said, and went on with his work.

THE big man finished the grapes, stared down at the ruined city.

"Aren't you afraid of being spotted so close to the Mercs' base?" he asked.

"One place is as good as another," Garth shrugged. "They've got posts further inland, too, scattered about the mountains. Where you from?"

"Little place called Millersville. East of here. My name's Wallace, in case you're interested. I'm—I was a doctor. The Mercs landed on us last Tuesday. Or maybe it was Wednesday. I've lost track of time. They were in planes they'd gotten from the Los Angeles airport. Blew the town to hell. My wife and kids . . ." Wallace broke off, staring at the distant ocean. "I've been wandering since then. Half-starved . . . half-crazy."

"That's what they hope," Garth said. "They figure hunger'll drive us into the open. Then they take us away, as slaves."

"Slaves!" Wallace muttered. "But how do they expect terrestrials to live on Mercury?"

"Don't know." Memory of Marcia choked Garth; his voice shook. "They drive the captives into that big conical tower and they don't come out again. Break them down into energy-vibrations, I guess, and shoot them out to Mercury."

"God!" Wallace shook his head. "Isn't there some way to get clear of these mountains? Some way to escape? The east, maybe?"

"Maybe," Garth grunted. "But you'd have to cross level, open ground and they'd spot you sure, there. They've all the country as far east as Salt Lake City, under their control. Could have the entire earth if they wanted it." He pointed to the charred spots on the slopes, the wreckage about

the city. "That's what's left of the combined forces of Europe, Asia, and America. It wasn't even a struggle. I watched it from up here. Most of the planes and tanks never even got this far. One touch of the purple rays and that was that. Same dose for the fleets. It didn't last an hour."

As he spoke, a squadron of gyros leaped from the ruined city, headed inland. Garth stood up, touched the big man's arm.

"Better make for safer cover," he said. "They'll pass right above us."

Wallace followed him into the underbrush, marvelling at his companion's silent tread. Eyes swinging right and left, Garth led the stranger along all but invisible trails, through the dark avenues of pines.

At length they reached a mossy clearing, mottled with sunlight and shadow. Garth put his fingers to his mouth, emitted a shrill, bird-like whistle. Immediately there was a grinding sound, a rustle of sliding pine-needles. A rock, crudely yet cleverly set in the side of the slope, swung back, revealing a dark opening. From this cave a ragged, bearded man crawled.

"Ah, Garth!" he nodded. "We heard planes, holed up."

"They've passed." Garth motioned to his towering companion. "Wallace. A new man. I picked him up over near the split oak. He's hungry."

"So're the rest of us. Ogden went fishing this morning and hasn't gotten back. Must've run into a Merc patrol. Our only fishhook, too!"

A DOZEN or so muddy figures had by now emerged from the cavern. Men, women, and children, unkempt, tattered. Cave-dwellers, as primitively armed as their forefathers of a hundred thousand years before. A small, grey-haired man, carrying a wooden spear, approached Garth.

"There's a chance for food," he said,

"if you're game. I used to go to a little village near Twin Peaks . . . for the golfing." He grinned, humorlessly. "It's not far from here and I understand the Mercs wiped it out a week or so ago. They wouldn't be likely to leave a patrol at such a small place, and if there's any canned stuff left in the ruins . . ."

"But suppose they *have* left a patrol?" Wallace demanded.

"Then we'll eat regular," Garth said slowly. "As slaves."

There was no hesitation on the part of the others. Hunger had banished all fear. Picking up their clubs, their spears, they prepared for the journey. Even the women and children would not remain in the cave.

In single file, they wound through the woods, gaunt, silent, wary, skirting every clearing, smoothing out every footprint left behind them. The occasional hum of an airplane motor froze them to rigid immobility; once a scampering squirrel sent bony hands reaching for weapons.

The very ghosts of terrestrial civilization, they seemed. Here a bearded unkempt man in the remains of a formal dinner jacket, his ringed fingers clutching a rude spear. Here a slim girl, a soiled ermine cape about her shoulders, her flowing evening dress in rags. Here a man in gayly striped pajamas, slippers on his feet, and a blood-stained club in his hand.

After hours of trudging through the dark forests, Garth, who was in the lead, halted, held up his hand. Bright sunlight, the green fields of a clearing, were visible between the trees. Very cautiously they stepped from the shadows, gazed down into the hollow.

Whatever the village had been before its destruction, it was no more than a desolate heap of ruins now. The Mercurians' deadly rays had done a thorough job, levelling houses, stores, transforming rich estates into barren,

blackened deserts.

Wallace, standing beside Garth, shuddered.

"That's the way Millersville must look," he whispered. "Now. . . ." Dark rage hardened his countenance. "They'll pay! By God, they'll pay for all this! Someday. . . ."

Garth nodded. There were few of this hand of fugitives who did not have bitter, deadly personal scores to settle with the invaders. He thought of Marcia, of John Harker, and the lines about his mouth deepened.

One of the women touched his arm.

"Aren't . . . aren't we going down?" she whispered piteously. "Unless we eat soon. . . ."

"It may be a trap." Garth dislodged a small boulder, sent it rolling down the hillside. Crashing into the debris, it kicked up a cloud of dust, ashes. Breathless, they waited for the dreaded hiss of energy guns, the flash of violet rays. The valley remained silent. Another rock, thudding into the ruins, brought no signs of life.

"Safe," Garth cried. "Come on!"

WITH frantic haste the half-starved refugees raced down the slope into the desolate village. The horror of the place, at close range, was appalling. Skeletons, shattered, blackened, sprawled about the streets. One small bony arm, clutching a grinning rag doll, protruded from a heap of crumpled stone. Pathetic objects littered the streets . . . a pair of spectacles, miraculously unbroken, a bundle of letters, tied with faded lavender ribbon, a baby's rattle.

These things, however, made little impression upon the band of fugitives. They were hardened to horror, conscious only of the gnawing pain of hunger within. Rooting among ashes, digging, clawing at heaps of debris, they sought for food.

With the finding of cans of vegeta-

bles, meat, beneath the ruined houses, the last of their veneer of civilization cracked. Men fought like wolves over scraps of food, stuffing their mouths, snarling with animal-fury. In vain Garth tried to stop them; famished, they were beyond reason.

At length Wallace gave a cry of triumph, dove into a heap of shattered timbers.

"Bread!" he shouted. "Bread!"

The others raced toward him. No fighting now; the remains of a baker's shop revealed stacked loaves of bread, mouldy, dust-covered, but enough for all. Within half an hour the hand of fugitives was gorged, replete, for the first time in weeks.

Climbing heavily to his feet, Garth began to gather together the remaining loaves.

"Each of us will carry as much as he can," he said. "We've stayed here in the open too long as it is. We can take enough back to the cave to last us . . ." He broke off abruptly, listening.

A drone of planes! Growing louder with each moment! Garth glanced up. Dots against the sky . . . gyroes, dropping swiftly!

Too late. Panicky, a dozen of the fugitives had started up the hillside toward the shelter of the forest. Violet beams broke from the descending aircraft, cutting them off, driving them hastily back toward the village.

The gyroes were low, now, not a hundred feet from the ground. Garth could see the dark, sardonic faces of the Mercurians behind the glass cowlings. In helpless rage, he watched them. For weeks he had cherished a dream of collecting a strong hand of terrestrials, descending upon, slaughtering, some Mercurian outpost at night, obtaining energy-guns from their victims. A dream that might ultimately have grown to the liberation of earth. And now, it was shattered. He threw down his useless club, turned away.

The Mercurians were herding them together like cattle. A wall of the purple rays, thrust from their hovering planes, moved relentlessly forward, driving the terrestrials down the valley. Useless to attempt flight. One flick of the invaders' wrists would blast them to atoms. Huddled in hopeless dejection the little band of fugitives plodded wearily onward.

GARTH walked with his head bowed in despair. His hopes, his plans for revolt, were smashed. To be taken to barren Mercury . . . a slave! Never to see the green fields of earth again! Dully his gaze swept the valley, the long slopes leading down to the sea.

It was nearly night before the drove of captives came within sight of San Francisco. A detachment of dark warriors, signalled by radio, were waiting for them near the outskirts of the city.

"Ah!" A metal-clad Mercurian captain stepped forward. "More workers for the plains of the home planet. And a scrawny, half-starved bunch they are! Hardly worth transmission!"

Surrounded by their captors the terrestrials were led through the ruined city, toward the huge tower that thrust like a spear-point above the blue waters of the Bay.

Garth studied the tall structure intently as they drew near. Of gleaming white stone, its base was submerged; the door, or entrance, located on the land side of the building, was reached by the broad marble causeway.

Files of swaggering Mercurian guards escorted the weary procession of captives along the causeway, halted them before the great bronze doors.

"What . . . what next?" Wallace faltered.

"Don't you know?" The man in the ragged dinner-jacket glanced at him scornfully. "They'll make our wrists fast, take us into this transmission plant and convert us into vibratory waves.

Next thing we know, we're on Mercury . . . slaves! The devils! If I had a gun . . . !"

Two guards were going down the line now, snapping queer woven-metal bonds about the wrists of their prisoners. Garth, watching them come toward him, swung his gaze to the Bay. Its surface was ruddy in the sunset and, he noticed, curiously agitated about the base of the great marble cone.

The two Mercurians were busy with the man before him, fastening the strange bonds about his unwilling wrists. The rest of the guards were lounging near the edge of the causeway, laughing, joking, gazing contemptuously at their captives. Garth drew a deep breath. It was now or never.

Muscles tense, knees flexed slightly, he stood poised for an instant; then, with one mighty leap, cleared the edge of the causeway!

As he dove, he could hear the shouts, the excited commands above him. Downward he went, cleaving the waters like a knife; soon there was only a greenish wall of water about him, deep silence.

Energy guns were churning the Bay when Garth came to the surface. The force of them tossed him about like a chip, and the water grew hot, boiling.

Garth gasped for air. Steam, created by the energy blasts, rolled over the surface like a mist, concealing him. Dimly he could hear the captain's furious cries to his men, the hiss of the guns; then, gulping a lungful of air, he dove once more.

Close in toward the submerged base of the great structure, Garth swam, hoping to find shelter under its massive walls. If he could circle it, reach the other side, he would be safe enough for the time being.

STILL under water, he approached the huge cone, swimming with long, easy strokes. And then suddenly he

felt it, the sweeping, dragging current that was carrying him toward the base of the building. An inexorable undertow, sucking him into a dark opening in its rocky wall!

Vainly Garth struggled to turn back, to rise to the surface. In the grip of the strange current he was helpless. His lungs were bursting now, his heart weak from exertion. He was, he realized, in a circular tunnel leading into the great building . . . a tunnel along which water boiled and seethed, violently, as though drawn by mighty pumps.

Suddenly Garth felt his head break water; gasping he breathed in air. Lights gleamed ahead, bluish, flickering lights. Borne along by the foaming torrent, he could obtain no grip on the wet glistening walls, was unable to check his mad forward progress.

The lights were close now. They seemed to come from tubes, great spark-gaps. A mighty mass of machinery blocked the end of the tunnel . . . and in the very center of the array of apparatus was a huge copper helix!

Desperately Garth tried to turn. It was clear, now . . . horribly clear. The Mercurians, for some obscure reason of their own, were stealing Earth's water, breaking it down into energy, transmitting it across the void. And he had been caught by the flow of the current, carried into their great intake pipe!

The water, he could see, ceased to exist as matter on passing under the shimmering helix. Transformed into energy it simply disappeared. Frantically he tried to grip the wall, hold himself back, but to no avail. In another minute. . . . Suddenly, the world went black.



CHAPTER V

GARTH never knew whether he maintained some fragment of consciousness during that tremendous journey, or whether the impressions formed themselves in his mind at the moment of his return to a material state. It seemed, vaguely, that he had trod the vast limitless cosmos, swinging past great silent stars, passing through a dark infinity of time and space.

Music, dim, solemn music, had come to him, each note like the tolling of mighty bells, a song of life and death, of creation, now harsh in wild atavistic melody, now deep with tortured longing. Suddenly, an endless distance away, a light appeared, drawing closer, becoming more brilliant with each moment. Nearer and more powerful the light became . . . dazzling. Blinded by it, Garth cried out . . . and received a mouthful of water.

For a moment, floundering about in the turbulent flood, Garth thought he had in some manner escaped the big helix in the Earthly transmission machine. Then, as he glanced about, full realization struck him.

Lights everywhere, brilliant lights, and a mass of machinery similar to that in the station on earth. Above him stretched a huge dome, and walls of black basalt thrust upward, covered with strange instruments. A power plant of some sort, lined with gigantic engines. Small figures, dark, scaly-skinned men, sat at control panels covered with switches, dials, levers.

Only one instant's glance, Garth had, of the great receiving station before the surging waters swept him past. Through an arched doorway he was carried, amid a welter of foam and spray, hurled into a broad canal. Here the flow was less violent and the boiling flood abated its force. Dazed, Garth struck out for a

bank of the canal, dragged himself wearily to the bank.

Several moments passed before Garth recovered his strength sufficiently to sit up, study his surroundings. When at last he did so, the sheer wonder of the place shook him.

He was, it seemed, in a city of some sort . . . but a city that surpassed his wildest imaginings. An immense dome, a bubble, apparently, of pink glass, covered it, tinting the sun's rays to a soft diffused glow. In the pale, rose-colored light he could see buildings, great truncated shafts of white marble-like substance, constructed in sweeping graceful lines, topped by countless slender towers. Spires, terraces, high parapets, thrusting upward at the glass dome.

A poem in stone, this city, marked by stately highways, winding footpaths. Gardens alive with queer fungoid growths, with clusters of brilliant, exotic blossoms, were scattered on every hand, lined the banks of broad canals.

Of all the structures beneath the dome the huge power plant from which he had just emerged was by far the largest. Towering upward against the pink "sky," its massive walls, its huge size, made it seem a fortress, a citadel. Water, stolen from Earth, it seemed, poured from the arched opening in an endless frothing torrent.

GARTH glanced along the main canal, saw that it terminated miles away at an opening in the glass-like hubble surrounding the city. He wondered what lay beyond, whether the rest of Mercury could compare to this garden spot. Through the opaque pink shell he could see nothing.

Footsteps on the marble walk nearby interrupted Garth's inspection of the strange city. Two Mercurians, clad in their close-fitting metal tunics, were strolling toward him!

Quickly he dropped behind a clump of strange, mushroom-like growths,

held his breath. For an earthman to be found here would mean certain imprisonment, death!

Unconscious of his presence the two men passed by, entered one of the great white buildings. But there were other Mercurians walking along the embankment, Garth noticed. Old men, for the most part . . . the younger ones, the fighting men, were, no doubt, in the army on earth. The entire population, to judge by the size of the city, could not be more than a million, if that.

Lying hidden beneath the clump of growths, Garth waited long hours, watched the great, glowing disc of the sun glide across the tinted roof of the city. At length there was darkness, broken only by a scattering of soft, shimmering lights within the tall marble buildings that lined the winding roadways. Squaring his shoulders, Garth emerged from his place of concealment, set out along one of the footpaths.

Fleeting shadows, hurrying shapes, peopled the darkness, but Garth avoided them, remaining always in the cover of bushes, dense growths. Cautiously he approached the neighboring stone structures, white and ghostly in the gloom.

All at once Garth's jaw tightened. One of the buildings, surrounded by a magnificent garden, bore a familiar device cut over its doorway. The strange, triangular crest which he had seen emblazoned upon Huno's cloak!

Perhaps . . . perhaps if this were the Thantor's dwelling, he might find some clue that would lead him to Marcia, might even surprise Huno, force him to disclose the girl's whereabouts! A mad, desperate chance, yet he faced discovery every moment as it was. Very softly, he set out toward the building.

Crossing the black street, crouching in shadows at the approach of passers-by, he at length reached the garden.

Soft, fur-like grass deadened his footsteps, great masses of vegetation concealed him. The palace was ablaze with lights, its tall windows forming orange oblongs in the darkness. Sounds of revelry, laughter, strange pulsating music drifted across the garden.

All at once Garth went rigid. A figure was hurrying toward him! A small, metal-clad figure, with the cringing, obsequious manner of a servant.

The man murmured something in hissing, sibilant Mercurian, drew nearer. Suddenly, noticing Garth's terrestrial garb, he sprang backward, a bubbling cry of terror on his lips.

With cat-like swiftness the earthman sprang, arms outstretched. Borne to the ground, his smaller opponent struggled vainly to tear Garth's fingers from about his throat.

"Try to call for help and I'll kill you," Garth whispered fiercely.

THE Mercurian nodded vigorously, drew a deep breath as the terrestrial relaxed his grip.

"Where is the earth girl?" Garth snapped. "Marcia Harker, the first of the captives taken by your army? Quick, now, and none of your lies!"

"Third window from the fountain," the man gasped. "One story above the garden. Prince Huno keeps her a prisoner there."

Garth studied the man's frightened face, decided he was not lying. Hastily he tore strips from his ragged coat, bound the Mercurian's hands and feet, gagged him. Then, thrusting the inert figure beneath a bush, he resumed his progress toward the towering white structure.

The fountain, a frail silvery jet in the darkness, was set in the wall of the palace. Garth counted three windows from it, on the second floor. All of this wing of the building was dark. Servants' quarters, he decided. But how to reach the second story?

For a moment he considered, then a way presented itself. A tall slender tree, similar to a terrestrial poplar except for its scarlet blossoms, stood some four feet from the wall. If he could climb to the top, bend it by his weight toward the window. . . .

Quickly he sprang into the tree, worked his way toward the top. As he mounted, it commenced to sway, lean toward the casement. Garth reached out, gripped the ledge, swung clear. The tall tree snapped back with a shower of scarlet petals, and Garth drew himself up to the sill.

The window was broad, deep-set. Unlocked, it yielded easily to his touch. With silent caution he lowered himself into the dark room beyond.

Thick rugs met his feet; he could see the sheen of velvet draperies, the glitter of golden ornaments. As his eyes became accustomed to the gloom, Garth realized that the room was otherwise empty. Sharp disappointment gripped him. Had the Mercurian lied, he wondered? Or had Marcia been moved to some other place? Certainly this did not seem the prison of a slave.

He crossed the room, drew back the gleaming metallic curtains that masked a door . . . and his heart suddenly leaped. Lying upon a low silken couch, her eyes closed in sleep, her face pale against the pillows, was Marcia!

Garth moved toward the bed, and at the sound of his footsteps the girl stirred, opened her eyes. A scream of horror rose to her lips.

Quickly Garth placed a hand over her mouth.

"Marcia!" he whispered. "It's me! Garth Arlan!"

"Oh!" Bright tears sprang to her eyes. "Oh, Garth, Garth! I've hoped, dreamed . . ."

For a long moment there was silence in the little room. At length Marcia broke from his embrace.

"What . . . what of Dad?" she mur-

mured. "That terrible night back at the old mission was the last I've seen or heard . . ."

BRIEFLY Garth told his story. When he had finished, the girl's body shook with sobs.

"Then he's dead . . . or a prisoner," she said bitterly. "And earth at the mercy of those devils! If only we hadn't seen that projectile, followed the instructions on those tablets! Oh, Garth, isn't there anything we can do?"

"First tell me what this place is, where the prisoners are kept, give me all the information you can!" He sat down beside her on the couch. "Right now things look pretty hopeless, but perhaps when I know more about this place, I may be able to work out some plan of escape."

"This is the city of Latath," she replied. "The only one of its kind on Mercury. From what I've been able to learn, the planet was once, milleniums ago, further from the sun, shielded from its rays by an atmosphere. Gradually it was drawn in closer, lost its protection of clouds. The race began to decrease, built this great dome to shield themselves from the sun's heat. It is filled with pure air, cooled by great conditioning units in the underground workshops beneath the city."

"Underground workshops?" Garth repeated. "Then that's where the prisoners are kept!"

"Some of them," Marcia replied. "The rest are sent outside, to the labor camps."

"But how do they live in that heat? If even these horny-skinned Mercs can't stand it, what chance would a terrestrial have outside the city's dome?"

"They wear vacuum-suits. Like a metal diver's suit on earth. And the prisons where they sleep are shielded like this city. Even so, they don't last long outside. That's why new ones are constantly needed."

Garth thought a moment, turning this over in his mind. Latath, the rose-pink city . . . and the terrestrials working on the sun-scorched plains beyond its sheltering dome . . .

"What about the water?" he asked. "Why are they bringing it here from earth?"

"Don't you see?" Marcia exclaimed. "Mercury's water supply was falling. A constant drying up of the underground springs that were their only source of supply. And no rainfall to replenish it. But with enough water poured onto the rocky plains, they would not only replenish their springs, but have an atmosphere to shield them. Clouds of steam to act like the glass dome of this city, protect the entire planet. Millions, hundreds of millions of gallons of water every day, sent in the form of energy vibrations from earth. Pouring from the central receiving station along canals, through special air-locks, and so out onto the plains. Terribly, unbelievably hot, the plains, and the water evaporates instantly into steam, great banks of mist, to form an atmospheric blanket. When the blanket has lowered the outer temperature sufficiently, the water, instead of evaporating, will remain on the surface as lakes, seas. That's what the terrestrial prisoners are working on. Artificial reservoirs, canals . . . to distribute the water properly. . . ."

Garth stared at her, incredulous. The magnitude of the Mercurian's plan was staggering. Earth, to be drained of its water, to be transformed into a barren desert! Its people enslaved to labor in the cruel beat of Mercury's sun-swept plains! It was unbelievably fantastic . . . and horribly true!

"**W**E can't let it happen!" he exclaimed. "Can't! You've got to find out all you can, Marcia, try to get hold of an energy gun! If we could learn how they're made, arm the pris-

oners . . . !"

"I'll try, Garth." The girl's gaze swept the small, luxurious room. "It's been so horrible, these months here! Huno treats me as though I were some strange beast! Brings his friends up here to see me, makes me speak, show off like a trained seal! And no one to talk to . . ."

"Huno's a devil! But couldn't you have escaped? The windows aren't barred, the palace is unguarded . . ."

"Escape?" Marcia shook her head. "Where would I go? Latath is small, a hundred square miles at most. I would be captured in an hour. The citadel, the transmission machine, everything is closely guarded. And to go outside, onto the plain . . ." She shuddered.

"I see." Garth nodded sombrely. "Then our only hope is to get energy guns, somehow, capture the citadel, and return the way we came. We'll have to get in communication with the terrestrial prisoners, arm them . . ."

"But how about you, Garth?" Marcia asked anxiously. "Where will you go? How will you live? Sooner or later you'll be discovered. When they find that servant outside, hear his story, they'll start a search."

"I don't know, yet," Garth said. "But I'll find a place, somewhere, hide out until we can get in touch with the slaves." He laughed reassuringly. "Don't worry, sweetness. I'll keep myself safe . . . come back again . . . soon."

Marcia clung to him tightly.

"Be careful," she whispered. "You're all I've got, now, Garth. Stay near the canal. The Mercurians have no boats, can't swim. I'll try to learn the secret of the energy guns, get word to the prisoners."

"I'll count on you, Marcia." He swept her into his arms, kissed her. "And now I've got to go, before they discover the man I tied up." Garth tore loose the long metallic curtains. "These

should make an excellent rope."

He had just commenced to knot them when they heard ribald, laughing voices in the hall outside.

"Huno!" Marcia gasped. "Quick! Hide!"

Garth's eyes darted about the room for some place of concealment. It was too late. The carved door swung open and Huno, followed by two grinning companions, entered.

At sight of Garth, Huno's bulging eyes flashed sudden rage.

"Gods!" he roared. "You . . . an earthman! Here!" His hand slid toward the gun at his waist.

Marcia sprang forward, a pale, very lovely picture in her sheer silken night-dress, threw her weight upon Huno's arm, preventing him from raising the weapon.

"Go, Garth!" she cried. "Quick!"

In a blaze of action Garth leaped for the door. His arms, extended, seized Huno's two befuddled companions by their necks, crashing their heads together. Stunned, the Mercurians tumbled to the floor. Huno was spitting strange oaths, trying to break free from Marcia's grasp.

INTO the dim corridor Garth ran, twisting, turning through a network of passages. Pale lights broke the darkness ahead, and he burst into a large, high-ceilinged room. A dozen startled Mercurians seated about a long banquet table, sprang to their feet, fumbling for their guns. In two bounds he crossed the room, felling with his fist a man who tried to bar his way.

Again Garth found himself in a gallery. He groaned in despair. Was there no way out of this immense maze? Heart pounding, breath coming in gasps, he raced on.

Behind him, furious shouts rang, metal-shod feet clattered upon the cold marble. All at once Garth was on a landing overlooking a long, pillared

hall, dimly-lighted, deserted. Broad steps led to the great shadowy room. Garth pounded down them, dashed across the hall toward massive inlaid doors that reached halfway to the ceiling.

Heavy metal rings were set in the panels. Seizing them, Garth pulled with all his strength. Slowly the big doors swung open, and a gust of warm night air swept the hall. Darkness . . . the welcome darkness of the streets . . . lay beyond.

As Garth raced from the building, he heard the shouts grow louder. Glancing over his shoulder, he saw Huno, a dozen followers, silhouetted in the light that streamed from the doorway. The Mercurian's voice shook with fury as he barked orders to his men.

Onward Garth ran, rounding corner after corner, in an effort to shake off pursuit; but onlookers, seeing his tall terrestrial form plunge by, sent up warning cries to direct Huno and his men.

The pale city was humming with excitement, now, blazing with lights. Other Mercurians had taken up the chase, were joining in the hue and cry. Like wolves, Garth thought, on the trail of their prey. Desperately he glanced about. Marcia had said to stay near the canal, but he had no idea in which direction it lay.

He was tired now, reeling from exhaustion. Days of starvation, of ceaseless struggle, had taken their toll. Behind him the shouts were nearer, the thud of running feet ominous. With stumbling footsteps he staggered along the street, seeking some place of refuge. Then all at once, his heart sank. The street was a *cul-de-sac*, ending in a low wall! He glanced back. The flash of lights, shadowy forms in the darkness. Cornered! And in another moment . . . !

Blindly, hopelessly, he turned to the wall, dragged himself over it. Through

an arbor of vines, strange perfumed flowers, he crashed; landed dazedly in a cloistered garden dimly lit by a soft bluish radiance. And as he landed, he heard a smothered, terrified scream . . . a woman's scream.

Garth swept the hair from his eyes, glanced up. Facing him was a woman, a Mercurian, he instantly realized, the first he had ever seen, close at hand.

In the glow of the swinging, flickering lamps, she was like some strange golden goddess. Tiny yellow scales gave her skin a soft lustre, contrasting strikingly with her black, glossy hair. Perfectly formed, her body was scantily covered by clinging, all but transparent, robes; her eyes seemed great, curiously-cut opals, flecks of fire in their dark depths. Bizarre, hauntingly beautiful, this woman of Mercury, yet with a certain fullness to her scarlet lips that spoke of fierce passions, tempestuous, swift-changing emotions.

AS Garth crouched there, the woman stared at him with a mixture of fear and amazement.

"An earthman!" she whispered. "A slave! You . . . you dare to enter . . ." She broke off at the sound of shouts, the clatter of feet in the street outside.

"They're after me," Garth gasped. "The Thantor, Huno, and his men. Hunting me down, as they hunt all of our race. I . . . I must go . . ." He swayed to his feet, but the strength had gone out of him. Reeling, he caught at a corner of the arbor to keep from falling. A clamor of voices, a thunder of knocks, sounded beyond the small door set in the wall.

For a long moment the Mercurian woman stared at Garth, her eyes inscrutable. Suddenly she clapped her hands, called sharply.

"Mafani! Kara!"

Two squat figures, wearing servants' garb, crossed the garden, bowed.

"Quick!" The Mercurian woman was like a fluttering yellow flame. "You, Kara, hold them at the gate with questions! Matan, fetch me a slave-band! Haste!"

Garth stared at them, bewildered. The woman had spoken in the liquid tongue of Mercury and he had not understood. His head swimming, he watched the stocky Kara draw a bolt, parley with Huno's men through the half-open door.

A moment later the other servant, Matan, was running toward them, carrying a gleaming silver band covered with strange markings. The woman took the band from him, bent to fasten it about Garth's arm. Her fingers, he noticed, were soft, satiny, unlike the horny skin of the Mercurian warriors.

"Say nothing," she whispered. "And have no fear." Then, turning, "Let them enter, Kara!"

The servant nodded, drew wide the door. Huno, fierce triumph on his dark face, strode across the garden, followed by his group of guards.

"Your pardon, my Lady Ysseth," he said to the woman, "but a rebellious earthling . . ." He broke off at sight of Garth, kneeling in the shadow of the arbor. "That is the man! Quick! Seize him!"

Two guards sprang forward, but Ysseth, the Mercurian woman, waved them back.

"Wait, Huno!" she said. "The earth-man is my slave!"

"What!" Huno growled. "Is this another of your tricks, Ysseth? The man belongs to no one and must be sent to the labor camps outside the city!"

"Look, then!" She pointed to the silver band about Garth's arm. "Is that not a slave-band? With my device upon it? The law of Latath states that an unclaimed slave becomes the property of the first to band him."

For a long moment Huno stared at the woman, then turned away, scowling.

"It is the law," he said savagely. "But someday, Ysseth, you will pay for this folly! Come! Let us go!" Motioning to his followers, he stalked from the garden.

WHEN they had left, Garth turned questioning to the woman. Her conversation with Huno had been in Mercurian and he had been unable to understand it.

"What was it?" he muttered. "What did you do?"

Swiftly Ysseth explained. Garth, listening, shook his head, puzzled.

"But why?" he asked. "Why should you, a Mercurian, save me from the labor camps?"

"Why?" Ysseth laughed, an odd, wide laugh. "Have I not gained . . . a slave?"

Garth gazed at her a moment, seeking the meaning behind her words. His mind, it seemed, was suddenly slow, dull, and the lights in the garden were beginning to whirl. Fear, nervous energy, had kept him going. Now, with the realization that he was safe, exhaustion gripped him. Very dimly he was conscious of the golden woman reaching to help him to his feet, and then everything was lost in the mists of oblivion.

CHAPTER VI

GARTH awakened to find himself in a richly-hung bedchamber, adorned with gold and silver furnishings. Hardly the room of a slave, he reflected. Still weak, he climbed from his couch. A metal tunic, a long cloak of some soft material, lay beside the bed. He donned them, turned to the large circular window at the other end of the room.

Below him lay the great city, a thing of beauty in the soft pink light that

streamed through the curving dome. Graceful gleaming buildings, green fields and gardens, winding streets along which small figures strolled. The massive receiving station bulked grey and somehow menacing above the city and Garth realized with a start that the torrent of water no longer poured from it into the canal. Sudden hope swept over him. Was it possible that the earthmen had risen, destroyed the great station at San Francisco?

A rustle of robes broke Garth's train of thought. Turning, he saw Ysseth, the golden woman, standing in the doorway. In the rose-tinted light she was more lovely than ever, and her vivid, seductive lips were curved in an inviting smile.

"Our city of Latath is beautiful, isn't it?" she murmured, joining him at the rounded window.

"Look" . . . Garth pointed . . . "What's happened? There's no water flowing into the canal!"

"It is nothing." Ysseth made a careless gesture. "When slaves come through, the stream of water from earth is shut off. See, they have arrived!"

Garth stared, gripping the sill with tensed fingers. From the tall arched doorway through which the water had poured, a dreary procession was plodding. Bent figures, terrestrials, dragging themselves along the bed of the canal, urged on by Mercurian guards wielding long lashes.

"Good God!" he grated. "The devils! Beating women and children! They'll pay for this!"

Ysseth gazed at him, her eyes very bright.

"You are attractive when you're angry," she smiled. "So different from our men of Mercury, with their stern, emotionless manner." She took his arm, her fingers resting lightly on the silver band that encircled it. "Come! The morning meal is ready . . ."

The days that followed taught Garth

much of the domed city of the Mercurians. Although Ysseth referred to him as her slave, he had no duties other than to accompany her, remain eternally at her side. As time passed, he learned the liquid speech of Mercury, and attending Ysseth on her walks about the strange city, became familiar with its streets, its landmarks.

Certain things which had puzzled him now became clear. He had wondered that so advanced a civilization had been forced to use terrestrial gyroscopes in their conquests on earth. Now, however, that he was aware of the small size of their glass-enclosed world, he realized that mechanical means of transportation would have been useless to them. And the general knowledge of English was no mystery when he realized that their sensitive apparatus had been receiving terrestrial broadcasts for years, that their conquest had been planned long before the landing of the projectile. But while they spoke the language, the limited range of earth's television broadcasts had permitted them no knowledge of its written symbols and they had been forced to use ideographs when sending their tablets.

The rule of the city, Ysseth told him, was lodged in the hands of the nobles, the Thantors; she and Humo were both members of this ruling class. Strict obedience to their ancient laws was enforced upon the workers.

AS to what lay outside the great dome, Garth had only an incomplete picture. Few Mercurians other than the guards at the labor camps ever went outside. At regular intervals about the base of the translucent "bubble," there were great airlocks, carefully guarded. The substance of which the dome was made, he learned, was not glass, but a crystalline material of tremendous strength and durability.

The daily life of Ysseth's household was monotonous. Most Mercurians,

their needs supplied by the workers, slaves who labored in the underground workshops, passed the days in idleness. Boredom on the part of the warriors had, quite apart from the falling supply of water, been instrumental in urging them to attack the earth.

In addition to visits among her group of friends, the seeking of amusement from dancers, musicians, Ysseth spent long hours in the garden with only Garth to attend her. There was something almost feline in the way her eyes followed his every move, but only once had he seen her display any emotion.

It had been on the first morning after the night they met. As they sat over their breakfast of synthetically-prepared food, Garth had told her his story, how he had reached Mercury. At mention of Marcia, a sudden frown had creased Ysseth's forehead.

"This terrestrial girl . . ." she said reflectively. "Is she beautiful?"

Garth, suddenly on the alert, had made a careless, non-committal reply, and the Mercurian woman's frown had vanished.

Yet though Ysseth kept him near her with a thousand trifling excuses, Garth found time to speculate on the chances of freeing the terrestrial slaves. His hope of learning the secret of the energy guns was in vain. Only Mercurian warriors were allowed to carry them, and they guarded their weapons jealously, keeping the secret of the guns' tremendous power to themselves.

More than anything else Garth worried about Marcia. He had promised the girl he would return, see her soon again. Did she believe him dead, he wondered? Had Huno vented his anger upon her, for aiding in his, Garth's, escape? Time after time he tried to free himself, for only an hour or so, from Ysseth, but always the Mercurian woman kept him near her.

One day while they were in the garden Ysseth seemed restless. All at

once she stood up, touched Garth's arm.

"Let us go," she said abruptly. "I have something I wish to show you."

Mystified, Garth followed her from the garden into the street. Walking respectfully behind her, as was his custom when they appeared in public, he noticed that she headed toward a section of the city which they rarely visited. At length Ysseth paused before a small, windowless structure, very strongly built, approached the armed guards who stood before it.

"I would like to visit the caverns," she said imperiously, exhibiting the curiously-wrought ring she wore.

The sentry glanced at the device, saw that it was a symbol of the Thantors, bowed.

"The slave will accompany you?" he murmured.

YSSETH nodded, passed through the doorway with a sweep of her robes. Garth, following, saw that they were in an elevator of some sort, surrounded by a stout steel grating. Ysseth touched a lever and the car began slowly to descend.

Down the car dropped, through a dark, metal-lined shaft, down interminably. In the dim light Ysseth was like a graven golden image, silent, motionless.

At length a pale illumination glowed beneath them and the car came to a stop.

"Look!" Ysseth said softly. "Look, Garth!"

The car had come to rest on the floor of an immense cavern, a vast shadowy grotto stretching on all sides as far as the eye could see. Gazing through the grating about the elevator, Garth drew a sharp breath. It was like a glimpse of the inferno.

Huge furnaces, jetting tongues of lurid flame, lit the great workshops, revealing gargantuan machinery, masses

of wheels, cogs, turbines, stretching up into the gloomy recesses above. The cavern echoed with a bedlam of noise, screaming drills, pounding hammers, clanking machinery, all mingled in a deafening cacophony of sound. The heat was unbearable, and a pall of smoke, of strange mephitic gases, fouled the air.

Dark figures peopled the immense cavern, sooty, sweaty slaves, dwarfed by the great engines to resemble ants about an anthill. Terrestrials, many of them, Garth suddenly realized, both men and women. Here a row of captives bent over a long conveyor, busily sorting objects of some sort . . . containers of chemically-made food, he thought. Beyond, a group of squat Mercurian underlings were hammering wearily upon a bar of red-hot metal. Further away a cluster of terrestrial slaves were shovelling slag into a car; their whip-scarred bodies, moving in tired rhythm before the glare of the furnaces, threw sprawling grotesque shadows upon the rough-hewn walls.

Faces drawn with toll, with despair, these captives labored, cringing before the swaggering Mercurian guards who walked among them, lash in hand. Pride broken, eyes dull, they waited for eventual release in death.

For perhaps a quarter of an hour Garth watched them, choking with rage, with a sense of his own helplessness. Then, silently, Ysseth touched the lever again and the car commenced to rise. Without a word she stepped from it, as they reached the surface once more, led the way to the garden.

Stunned by the horror of those murky caverns, Garth followed her blindly, as though in a dream. Bitterly he reproached himself for remaining inactive, while human beings faced a living death below the surface of Merestry.

As they entered the garden Ysseth turned to Garth, her brilliant eyes fixed avidly upon his face. Her scarlet lips

were moist.

"What do you think of our workshops, Garth?" she said softly.

"Think!" he burst out. "Do you need ask . . ."

"And yet," she interrupted, "all terrestrial captives are sent there, now, except those who experience an even more terrible fate in the labor camps outside the city. Do you not wonder, Garth, why you enjoy such freedom, such favor?"

Garth stared down at her. His voice, when he spoke, was harsh, cold.

"Who am I to wonder?" he said. "A slave . . ."

"No!" she whispered. "No!" With trembling fingers she unfastened the silver band about his arm, dropped it to the ground. "It is I who am the slave!"

SOFT arms stole about Garth's neck, drawing him down to her. He could feel her lithe body pressed tightly against his own, feel hungry lips, hot breath, upon his cheek. Instinctively he drew her close . . . and then his gaze fell upon her eyes. Sparkling, many-faceted eyes, the eyes of an alien race. She was a Mercurian, of the ruthless breed who planned the enslavement of his fellow-men, who were stripping earth of its precious water to leave it a barren, lifeless desert. The breed which had made Marcia a prisoner . . .

With a sudden, fierce movement Garth broke the grip of those caressing arms, threw Ysseth roughly to one side. Stooping, he picked up the silver arm-band.

"I prefer to remain a slave, thanks," he said mockingly. "The duties are more pleasant!"

Crouched against a marble bench where he had thrown her, Ysseth stared unbelievably at him.

"Garth!" she whispered. "Garth! You . . . you can't mean . . ." Abruptly she straightened up, her counte-

nance contorted with cold rage. "So it was that white-faced terrestrial girl after all! I shall see that you join her!" Ysseth's laugh was like the tinkle of broken crystal. "Kara! Holu! Matan! Quick!"

Garth, warned by the menace in her voice, sprang toward the gate. Before he could reach it, however, a dozen of Ysseth's servants had rushed upon him, held him firmly in their grasp.

"And now," Ysseth smiled icily, turned to one of her attendants, "you will take him at once to the Thantor Huno, say I send him as a gift!"

As the swarthy Mercurian servitors led him out, Garth could hear Ysseth's brittle laugh behind him; he thought it ended in a choking sob.

They found Huno in the great hall of his palace, surrounded by a dozen of his followers. At sight of Garth, the Thantor's face lit up with fierce joy.

"So Ysseth has repented of her folly," he murmured. "Excellent! The man is a dangerous rebel." He paused toying with the silver medallion about his neck. "A convoy of slaves were to come through today. They should already have arrived at the receiving station. Let this man join them, be sent to the labor camps outside."

As Huno spoke, Garth's eyes swept the pillared hall, hoping for a last glimpse of Marcia before they led him away. If only he could get word to her! Perhaps some of the servants within the hall might tell the girl of his fate . . .

Then they were taking him out once more, dragging him through the winding streets toward the huge grey citadel. As they approached it, Garth saw that the flow of water into the canal had ceased, that a column of perhaps a hundred bewildered terrestrials were issuing from the arched doorway, staring in a mixture of fear and wonder at the strange, unreal beauty of the Mercurian city. Stocky, purple-cloaked guards

herded them like cattle along the muddy bed of the canal.

Ysseth's servitors approached the leader of the convoy, pushed Garth forward.

"A rebellious house-slave," they explained, "to go to the labor camps, along with the others!"

"So." The captain's whip curled about Garth's shoulders with stinging force. "Get into line, dog! We'll sweat the rebellion out of you on the plains!"

Stunned by the force of the blow, Garth joined the pitiful procession. The captives seemed scarcely aware of his presence. Stumbling with exhaustion, they plodded along the canal-bed toward the air-lock at its end.

When they reached the lock, a huge circular metal door set in the side of the glass-like dome, the guards came to an abrupt halt, grinning.

"Heat-suits!" The captain barked, turning toward a small guard-house beside the air-lock.

At his command soldiers ran from the small building, carrying bulky pieces of equipment not unlike ancient suits of armor. Of the same strange, light metal as the projectile, the tablets, which had reached earth, they were built in double thicknesses with a heat-resisting vacuum between the layers. Airtight, cunningly jointed at knee, elbow and hip, the heat-suits had oxygen tanks upon their shoulders to provide a supply of air.

With the ease of long experience the guards climbed into their protective armor, strapped their energy guns about their waists. The captives, unfamiliar with the heat-suits, were slow, clumsy in donning them.

Garth had just picked up his heavily-tinted, transparent helmet, was about to place it over his head, when he heard swift footsteps behind him, the sound of his name being repeated in a choked,

sobbing voice . . . a woman's voice.

Wheeling about, he saw Marcia, her blue eyes dim with tears, running toward him. She brushed past the startled guards, swayed against his tall, metal-encased figure.

"Garth!" she whispered. "Oh, Garth! They told me, the servants at the palace, that you had been sent to the camps outside! They can't do this, Garth! Can't! Men last only a few months on the plains!" Face wet with tears, she tried to hold him back from the air-lock into which the captives were filing.

"It's . . . all right, Marcia!" Garth bent, kissed her. "We'll be back, all of us slaves, from the camp. Back to take this city, return to earth again! Chin up . . . you'll see!"

A stony-faced guard tore the girl from his embrace.

"Back to your master!" he growled. "And you, earthling" . . . the man drew an energy gun from his belt . . . "into the air-lock before I blast you!"

One quick smile Garth flashed at the girl, then, snapping his helmet into place, strode into the big airlock. With a clang the massive double doors swung shut behind him.

Marcia slumped to the ground, a broken, abject figure. Garth gone! Sentenced to the terrible labor camps on Mercury's sun-seared surface! Camps from which no slave had ever returned! She crouched upon the canal embankment, shaking with sobs.

SUDDENLY the girl felt a hand grasp her shoulder, roughly . . . the dark, scaly hand of a Mercurian. She glanced up. Two grim-visaged men in servants' garb stood beside her.

"Come!" One of them said harshly, pulling her to her feet. "Quickly!"

Marcia stared at the men in amazement. Huno's guards, no doubt, sent to bring her back to the palace. But no . . . the strangers wore a device

quite different from that of her captor.

"Who are you?" she whispered. "What do you want?"

"You'll find out soon enough," the man said curtly. "Come along!"

Helpless, she allowed herself to be conducted across the city to a tall white structure standing in a walled garden. Silently the men entered the dwelling, stepped into an elevator. A moment later Marcia found herself on an open terrace, surrounded by high parapets. At one end of the terrace, upon a couch of shimmering scarlet material, lay a slender, gold-skinned Mercurian woman. Sleekly beautiful, her voluptuous figure was revealed by a clinging, sheer gown; her eyes, as they dwelt upon Marcia, were like hot coals.

"The earth-girl!" she whispered, a narrow smile twisting her crimson mouth. "You have done well, Matan!"

"You . . . you wanted to see me?" Marcia asked.

"Yes. I wanted to see you!" With a swift movement the golden woman sprang from the couch, tore the fastening from Marcia's robe. Rustling softly, it fell to the floor, leaving the earth girl clad only in fragmentary undergarments, a slim white figure, fragile, graceful, exquisite.

With a startled cry Marcia reached for her robe, but the two Mercurian servants held her fast.

"So!" Ysseth stared at Marcia, appraisingly, contemptuous. "As cold and white as some distant star! While I . . . I am as golden as the hot sun! But perhaps . . . perhaps the sun may warm you, may give your skin a softer hue!" She laughed, sardonically, advanced toward the girl, lips curved in cruel lines. "You know the earthman, Garth Arlan? You . . . love him?"

"I . . . I . . ." Swift color rushed to Marcia's cheeks. "What does this mean? Why have you had me brought here?"

"See!" Ysseth's voice was mocking.

"She reddens! Then it is true! You do love him! And he is fool enough to prefer you to me! But after the sun of Mercury has kissed your pale skin, perhaps he will regard you differently! And when you are a blind, burned thing, he will return to me! To me!" Ysseth's voice was shrill with triumph. "Stand her against the wall!"

Marcia's eyes widened with horror. Twisting, struggling, she tried to break away from the two servants, but in vain. Stolid, emotionless, the men dragged her to the wall, lashed her wrists and ankles to rings set in the stone.

For a long moment Ysseth's brilliant eyes rested upon the girl's slender white figure. Then, smiling thinly, she settled back upon her couch.

"The opening, Matan!" she said softly. "Let us see if sunlight can improve the earth girl's beauty!"

SPEECHLESS with terror, Marcia sagged against her bonds, watching. The man Matan had climbed upon the parapet, a curiously-shaped lever in his hand.

Ysseth's tall dwelling was close to the edge of the great curving dome. The roof of the translucent glass-like substance swept low over the terrace, meeting the ground only a short distance away. And set in the glass was a round metal-ringed affair, resembling a window, through which, as in the rest of the dome, weakened, rose-hued sunlight poured.

At a signal from Ysseth, the servitor reached up, fastened the end of the lever about a projecting knob, turned it. At once a circular pane of glass swung back, and a beam of hot sunlight poured through, sweeping over Marcia's slender figure. Behind this opened pane, there were others. The dome was made up of several layers of the translucent material; to open them all would permit the atmosphere of the city to escape, bring death to everyone within. But

by opening the inner thicknesses of tinted glass, one after the other . . . all except the last and outermost one . . . a slender ray from the burning sun could be safely admitted.

As the first pane was opened, and a beam of sunlight poured upon the girl's all but nude figure, a shudder shook her. It was like a breath from a furnace, blinding, dazzling. Perspiration broke out upon her forehead and her brain reeled. So near was the sun that even with only one pane of tinted glass swung back, the heat was terrific. A cry of anguish, of terror, burst from the earth girl's lips.

Ysseth, watching closely, laughed.

"Do you think, then, that Garth will prefer you to me when you are blind, when you skin is burned away to leave a wrinkled mass of scars! Before another hour has passed, we will stand side by side once more, compare our charms!" She turned, raised her hand. "Another, Matan!"

The man nodded, reached out with his lever. A second pane of the crystalline substance was turned back and the beam of sunlight now became a white-hot lance.

Marcia screamed as the relentless rays struck her. A thousand cruel needles seemed to be piercing her body, her skin was on fire. She writhed in agony . . . agony that increased with each second. Already her eyebrows, her eyelashes were singed, her lips cracked by the searing, burning heat. The few fragments of clothing that remained upon her body were beginning to scorch, turn brown. Dazedly, she cried out.

"No! Stop! Can't stand . . ."

Ysseth moistened her red lips, lay back indolently upon her couch.

"So soon?" she whispered. "I had hoped for more amusement. See, Matan, already her skin turns red, blisters! They are not accustomed to the sun, these earthlings! In a little while, now, she will be hideous, a mass of scorched

flesh! Garth will enjoy the sight of her, should they meet again!" She raised her hand. "The third panel, Matan!"

The servant reached up with his lever, fastened it about the knob of the third panel. Marcia groaned, in maddening torture. The pain was unbearable; her eyes could no longer see. Branded, her body seared by the white-hot sunlight! Flayed, made a grotesque and ghastly sight! She tried to scream, but no sound came from her parched, swollen lips. In another moment . . . the third panel . . .

YSSETH was leaning forward now, her eyes eager. Matan had unlocked the third section of tinted glass, was drawing it back. A thin dazzling beam touched Marcia's wrist, and the girl's body went rigid with agony. Slowly, as Matan drew open the panel, the fierce new ray of sunlight crept along her arm . . .

Then, suddenly, there was a pounding of footsteps, a clatter of accoutrements. Dark figures burst through the doorway, raced across the terrace. Huno, followed by his purple-cloaked warriors, took in the scene with one sweeping glance.

"Quick!" he shouted, his dark face furious. "The opening!"

A guardsman sprang to the parapet, hurled Matan to one side. Snatching up the long lever, he snapped shut the three panes of tinted glass.

Hastily Huno cut Marcia's bonds, threw his cloak over her limp, inert figure. Very grim, he turned to Ysseth.

"Once again you interfere with my captives," he said sternly. "And this time the law of Latath does not shield you. The earth girl is mine, wears my slave bands. There seems to be no limit to your madness, Ysseth!"

The Mercurian woman bit her lip, clenched her fists, tightly.

"You protect a terrestrial!" she

cried. "You who have sent a thousand, ten thousand, to the plains outside?"

"You also protected a terrestrial, not so long ago," Huno laughed. "Do as you wish with your own slaves, Ysseth, but leave mine to me. Torture and burn to your heart's content, so long as they are not my captives. This girl is not made for pain. Had I not missed her, thought to come here, you would have paid heavily!" He turned to his attendants. "Take the earth girl to my palace, see that her burns are treated!"

Nodding, the guards picked up Marcia's slight figure, left the terrace. At the door Huno paused, a mocking light in his eyes.

"Goodbye, Ysseth! May your next terrestrial lover prove more . . . com-
plaisant!"

Laughing, he strode through the doorway.

CHAPTER VII

AS Garth Arlan stepped from the airlock of the city, a strange feeling of unreality crept over him. Seen through the dark, protecting glass of his helmet, the plain was like a glimpse of hell.

On all sides there was only barren rock, cracked, split by the awful heat of the sun, or endless, blazing sand. Here and there great fissures yawned, while jagged spires of stone, grotesquely formed, cast fantastic shadows across the arid ground. Barren, desolate, appalling, the surface of Mercury, a terrible contrast to the cool, smiling city they had just left.

Overhead, the sun was an immense fiery ball, covering almost half the heavens, pouring its light like white rain upon the plains. Here and there Garth could see strange bubbling wells, spouting grey viscid liquid in sluggish streams.

As he watched, one of these queer springs erupted in a jetting, boiling geyser, spraying the barren landscape with the grey liquid. For a moment Garth stared at it puzzled. If this were water, why did the Mercurians seek to transport earth's supply to their own planet?

All at once the explanation swept through his brain. It was lead! Natural veins, deposits, of lead, reduced to a molten state by the searing heat! And terrestrials worked in a place like this!

Sudden curt gestures by their guards interrupted the captives' inspection of the rocky, furnace-like plain. With threats of the Mercurians' energy guns they were driven forward, toiling wearily along a beaten trail.

Garth found the heat-suit stiff, clumsy. Already, in spite of the vacuum between its layers, the temperature within was staggering. The captives reeled dizzily as they walked, necessitating frequent pauses for rest.

During one of these halts Garth, crouching in the shadow of a misshapen rock, glanced back. Latath was like a great pink bubble resting upon the plain. As he stared at it, he saw one of the air-locks swing open and a torrent of water began to pour onto the rocky soil. Instantly clouds of steam arose, veiling the city in mists. Millions of gallons of water, transformed into vapor, to rise, create a protective blanket that would some-day shield the entire planet from the sun's rays. Long years it would take, for even so small a world as Mercury, but with unlimited energy from the sun to drive their solar engines, the Mercurians lost nothing but time. And when they had finished earth would be a barren, lifeless desert. . . .

Garth glanced at his fellow prisoners. Behind the dark-hued helmets their faces were only stolid, dull masks, betraying no hope, no emotion. Terres-

trial pride had died within them, leaving only human robots, plodding automatons. . . .

NIGHT had plunged the plain in darkness when they arrived at the labor camp. In the eerie glare of great searchlights the captives could make out a pink-hued dome, such as covered Latath, only of much smaller size. Exhausted, they staggered through the heavily-guarded air-lock, snapped open their helmets to gulp the cool, conditioned air inside.

Lights flickered, armed guards ran toward the captives. Garth could see a large grey building, its doors and windows barred, and a fortress-like structure in which the guards were quartered.

At a command from the Mercurian captain the prisoners took off their vacuum-suits, which were quickly carried into the barracks, placed under lock and key. So long as the suits remained in the hands of their captors, no escape was possible.

The massive gates of the prison building swung back, the band of weary terrestrials were waved through the entrance. Along dim-lit corridors the guards drove them, into a large shadowy cell already crowded with indistinct shapes. A moment later the door of the cell clanged shut.

"More poor devils from home," a dull voice muttered. "Well, so much the less work for us. How many died yesterday?"

"Twenty-three. And several more won't last until morning," another voice replied.

"Well, there're at least a hundred in this new convoy. That should help for a while." A grey-bearded, wasted figure came forward. "Greetings, fellow terrestrials! What's the news from earth?"

"The sea-level's falling," one of the newcomers replied. "Also the Mercs

are going further east to find more slaves. As far as St. Louis there's only an empty wilderness. . . . You . . . You mean to say this is all that's left of the millions already sent across?"

"There are other cells," the grey-bearded man replied. "A few thousand terrestrials altogether, a few more thousands in the work shops beneath the city. Here a man lasts only a few months. I . . ." He broke off, his eyes peering from beneath matted eyebrows at Garth. "Why . . . ! You . . . you're Garth Arlan?"

"Yes." Garth stared at the man. "But I don't recognize . . ."

The prisoner laughed, harshly.

"No," he whispered. "I don't guess you would. You left me, Garth, in the cellar of the old mission, nursing a sprained ankle. While you went out to warn, save the world. No need to say that you failed."

"What!" Garth seized the man's shoulders, dragged him into the light that streamed through the barred door. "John Harker! But . . . but, it's impossible!"

"Not impossible, Garth," Harker said bitterly. "It's true." He passed a calloused hand over his seamed, aged face. "Men grow old quickly on the plains. There're others here who say they know you. Wallace, Ogden, Mears . . ."

The men came forward, clustered about Garth. All of them were mere grim and terrible caricatures of the friends he had known, lived with during their long months hiding in the hills. Suddenly Harker was speaking.

"Have . . . have you heard anything of Marcia?" he muttered.

GARTH told his story. When he had finished, Harker straightened his bent shoulders.

"So she's alive then, and well," he murmured. "That's something. If only we weren't condemned to dying

out here, I might . . ."

"Dying!" Garth growled. "Why talk of death? You say there are several thousand of us, only a few score guards? Haven't you tried escape?"

Harker shook his head despondently. "Escape?" he said. "Look about you, Garth. Bars of steel, and beyond them, armed guards. What could half-starved scarecrows like us hope to do against their energy guns? And even granting that by some miracle we were able to get out of this prison, how could we ever hope to attack Latath!"

"Why not?" Garth demanded. "We'd have energy guns from the guards here, would be able to break through the outer shell. . . ."

"Thus allowing the air to escape, killing not only our enemies but all terrestrial prisoners in the city, the underground workshops. Killing . . . Marcia." Harker's voice was dull. "And the air-locks of Latath are well guarded. Impossible, Garth! Madness to even dream of it! A few days on the plain and you'll have forgotten your dreams, forgotten everything." He turned away wearily, threw himself upon the metal floor. "Rest, lad, while you can! You'll need your strength for tomorrow!"

Garth watched the others lie down, fall into swift, exhausted slumber. But for long hours after they had gone to sleep, he remained awake, examining their prison, seeking some method of escape.

Dawn swept the prison with a blaze of glowing heat. The pink-hued shell about the camp cut the sun's rays to only a fraction, but that fraction was terrible to a terrestrial, although only pleasant to the horny-skinned Mercurians. Dirty aluminum plates, too soft to be used as weapons or to cut the steel bars, were thrust into the cell, each plate bearing a scanty portion of synthetic food.

The meal over, the prisoners were led out, given their heat-suits once more.

In long columns they filed through the airlock, escorted by heavily-armed Mercurian guards, out onto the barren plain. For a mile or more they marched, past weird rock formations, skirting gaping fissures, until at last they reached great heaps of crumbled, broken stone. Toiling wearily up the mounds, they finally reached the summit, and had their first glimpse of the vast works the Mercurian engineers had planned.

The pit was immense, stretching for many miles before them, and from it a network of half-finished canals branched. Great engines, solar-powered, were at work digging, drilling, cutting away the tough rock, while the night shift of prisoners, heat-suited terrestrials, swarmed about the floor of the pit, filling conveyor cars, shovelling loose rock, completing the rough work of the machines.

Far into the future the Mercurians had planned, awaiting the day when the water brought from earth had created a protective atmospheric layer, when their planet's temperature had been sufficiently lowered to permit this and other similar reservoirs to store up the stolen waters. A garden spot, they envisaged, cooled, rendered fertile once more by irrigation ditches . . . a garden spot created by the ruin of earth.

As the day shift of captives appeared over the rim of the crater, the weary night gang threw down their tools, formed ranks, and commenced the ascent. At once the newcomers were divided into groups, assigned various jobs.

GARTH was motioned toward a shovelling detail. There was no means of communication between the prisoners; their heat-suits had no micro-wave sets, with miniature ear-phones and mike inside the helmets, such as the guards' suits were equipped with. Following the lead of the older

prisoners, Garth fell to work.

The hours that passed were a nightmare of toil. Heat . . . blinding, killing heat . . . penetrated the insulated suit until his head spun and his heart pounded furiously. No rest, no brief pauses were permitted by the Mercurian overseers, nor was it possible to refresh himself with water while cooped within the heat-suit.

From time to time exhausted workers would fall to the ground unconscious, but the others dared not stop to aid them. Once Garth saw a drilling gang accidentally break into a pocket of molten lead, saw them sprayed by the bubbling liquid until they were only gray formless spectres.

When the day at last came to an end, Garth was barely conscious. Only the thought of the relative coolness of the prison, water for his swollen, cracked lips, rest for his weary, pain-racked body, kept him going during the grim, interminable trip to the camp.

In the weeks that followed Garth fell into the dull, almost comatose state of the other prisoners. Long days of toil, blank intervals of rest, and always the torturing, maddening heat. Life became a terrible delirium, broken only by short moments of conversation at meal time.

It was during one of these intervals that the idea came to Garth. He and Harker were sitting beneath the barred window, wolfing their morning meal, while the huge Wallace, now wasted, thin, crouched nearby. Morning sunlight, still strong although diffused by the tinted dome, poured through the opening. As Garth scraped his bowl clean, he noticed it gleam in reflected light.

"John!" He gripped Harker's skinny wrist. "What would you say these bowls were made of?"

"Eh?" Harker stuffed the remains of his breakfast into his mouth. "Why, aluminum, of course. Too light to be

used as a weapon, and useless for cutting away steel bars. The Mercs think of everything."

"Everything?" Garth whispered. "No, John! Not everything! Look!" He pointed to the steel walls of their prison. Moisture, the sweat of countless prisoners, had covered the wall with flakes of red rust.

"Well," Harker demanded, "what of it? It would take a couple of centuries for six inches of chilled steel to rust through. We'll be lucky to last a couple of months. I hope they put me on a drilling gang today; you can rest sometimes, when . . ."

"Listen!" Garth's voice shook with excitement. "You don't understand! Aluminum from these dishes, rust from the walls! You see? The thermite process! Violent reaction, creating tremendous heat! Heat enough to melt those bars at the door like butter!"

"But . . . but . . ." Wallace bent low, a frown on his scarred face. "Heat is required to start the thermite process! Plenty of it! And we've no way . . ."

"WE have a way!" Garth replied. "Take a look at these bowls! Dull, grey aluminum! But suppose they were polished, scraped! They'd be brilliant, shiny, almost, as mirrors! The sunlight coming through this window is bright, hot, even though it's been tremendously weakened by the dome of colored glass. And if all of us polished up these concave bowls, focussed the light upon an aluminum-rust mixture, it would start the reaction!"

"Then you mean there's a chance?" Harker whispered fiercely. "That . . ."

A rattle of the cell door interrupted him. The guards had come to take them out for the day's work. Garth made a gesture of silence to his companions, joined the file of prisoners issuing from the cell.

All that day the work, the heat, made

no impression upon him. His mind was occupied with plans for escape; it seemed only a moment until they were returning to the prison.

That evening, as the captives wolfed their slender rations, Garth motioned them to him.

"Listen!" he exclaimed softly. "Would you fight for a chance to win your freedom, perhaps return to earth? Return to the green fields, the blue skies we know and love?"

A swift mutter of assent ran about the circle. Dull eyes glowed with hope, men who had thought only of death, now thought of life . . . a new life, far from this burning, barren planet. A harrage of questions was fired at Garth.

In quick staccato words he replied, outlining his plan.

"It'll be a slow job," he concluded. "Every night we'll scrape the bowls against the walls, get a handful of powdered aluminum together, with a certain amount of rust. And the concave inside of the dishes must be polished, the day we make our attempt. There's no surety the process will work, and we face certain death if we're caught. Do you want to go through with it?"

For a moment the men paused, considering. Then Ogden, a small, white-haired man, spoke.

"That can only get us out of the cell," he said, "provided it works. And assuming we can conquer the guards, unarmed, secure our heat-suits and cross the plain, how do you expect to enter Latath? By the time we got close enough to an air-lock to rush it, we'd be blown to bits."

"Isn't it better to be blasted, fighting, than die a slow death in this blazing hell?" Harker growled. "Let me knock off a few of these scaly devils before I die and I'll go happy!"

"And I! And I!" others cried. "We saw our homes destroyed, our friends, our families mowed down! Let's try it!"

"Right, then," Garth exclaimed. "Wallace, stay at the door and keep an eye open for guards! We'll start now!" Seizing his aluminum bowl, he began to scrape it upon the rust-flaked wall.

Progress was maddeningly slow. With interruptions by the guards on their rounds, with the clumsiness of their implements, they had obtained less than a handful of the mixture of aluminum and rust particles by dawn. But as the days passed, the heap of grey-brown powder concealed beneath a pile of tattered rags, grew steadily. A change, too, had come over the captives. Hope had taken the place of blank despair and a certain pride, defiance, superseded their former abject bearing. There was talk of their homes on earth, of revenge upon these dark invaders who had shattered their lives.

ONE evening several days before the time set for the attempt, a group of guards appeared at the cell door. Warned at their approach, the terrestrials had ceased their scraping, thrown themselves upon the floor in semblance of sleep.

Energy guns in hand, the guards unlocked the door, swept a light over the sprawling forms. One of them prodded Garth with the toe of his boot.

"Up!" he growled. "You're wanted at the barracks!"

Garth fell in between two of the men, his heart sinking. Had they learned of the plot, decided to question him? He remembered his previous experience with the thought-helmets, realized the futility of attempting to withhold information.

Across the yard, into the barracks . . . his guards motioned him toward a small door. Puzzled, he opened it, found himself in the commandant's headquarters. A slender figure, muffled in a scarlet cloak, stood facing him.

"Garth!" The cloak fell to the floor, revealing a richly-clad figure . . . a fig-

ure with full red lips and glowing, golden skin.

"Ysseth!" he muttered. "What do you want here?"

"I want you, Garth! You!" She laid a trembling hand upon his arm. "I was a fool, a mad jealous fool to have had you sent away! Look, Garth!" Ysseth drew a slip of paper from beneath her robe. "Your release! Ah, the trouble I had getting the council of Thantors to pass on it! Bribery, trickery . . . But that doesn't matter, now! You're free, free from this awful place! You and I . . ."

Garth glanced at the paper, crumpled it.

"Live in ease with you?" he laughed coldly. "While my companions die here in this hell-hole? Not until they also are free, do I leave!"

"But . . . Garth!" Ysseth swayed close to him. "You'll refuse love, position, every luxury . . . to stay with the other earthmen? I . . . I cannot free them all! Come with me, Garth! Come, and I'll do anything within my power for you! Anything!"

"You mean that?" Garth seized the woman's shoulders, swung her about to face him. "Anything?"

Ysseth nodded, silently.

"Suppose," Garth said, "that I and the other prisoners were to win our way out of this place, attack Latath? Unless an airlock were opened, we would have no chance, would die! But suppose someone within the city, someone who wore a Thantor's device" . . . he glanced at the ring upon Ysseth's finger . . . "were to order one of the locks to be opened . . ."

For a long moment Ysseth gazed at him, searchingly.

"You want me to turn traitor?" she whispered. "Betray my own people? And yet. . . ." Suddenly she straightened up. "I'll do it! For you, Garth! With Huno and his clique out of the way, you and I can rule Latath!" Her

jewel-bright eyes sought his face. "You swear to give up this terrestrial girl, to take me as your wife, if I do this? You swear?"

GARTH did not answer. To give up Marcia . . . give up the girl he loved! But to capture Latath, release the enslaved terrestrials, perhaps free earth. . . . Any sacrifice was worth that.

"I promise," he said slowly.

"Ah, Garth!" Ysseth drew his head down, kissed him. "Tell me what to do!"

"Watch the plain from your terrace each night at the fourth hour," he said swiftly. "On the night that you see three flashes of light through the city's glass shell opposite your palace, go at once to the nearest airlock, tell them you are expecting an officer from the garrison here, have them open the lock."

Ysseth nodded, pressed her lips once more against his.

"I'll wait for your signal, Garth," she whispered. "May the gods watch over you!" Drawing her cloak about her, she touched a button on the desk.

A guard appeared at the doorway.

"The interview is concluded," Ysseth said coldly. "Take the slave back to his quarters!"

This meeting with Ysseth brought new hope to Garth. If they could win the prison, the way into Latath was clear. The price, his marriage to the Mercurian woman, while it meant the end of his dreams, was cheap if it purchased the freedom of his countrymen. In a fever of impatience he supervised operations, watched the heap of aluminum and iron rust grow.

At last all was in readiness. Sleepless terrestrials, crowded upon the floor of the cell, waited for dawn. In their hands they held worn fragments of the aluminum bowls, scraped, polished, until they gleamed like silver. Heaped

upon the floor, surrounding the lower ends of three of the door's steel bars, was a large pile of the powdered thermite mixture.

Harker glanced through the window of the cell, saw a pale light appear against the pink-bued "bubble" that covered the camp. From the guards' barracks across the court there was no movement, no sound. Only the monotonous pacing of the sentries before the airlock, the main gates of the prison, was audible.

Swiftly the sun rose, its long level beams piercing the glass-like dome with burning heat. Garth watched the red-hot tide pour through the cell window, sprang to his feet.

"Now!" he whispered. "Quickly! We've barely time, before the guards awake!"

"Right!" Harker thrust his hand, gripping a polished bit of aluminum, into the patch of sunlight, flashed the reflected beam onto the heap of grayish dust. A score, a hundred, other hands followed his example and a hundred jets of light, narrowed by the concave reflectors, met in a bright circle of heat.

Garth eyed the prisoners, sprawled in a welter of humanity upon the floor, gave whispered instructions. A hand here and there, to be moved slightly, thus shrinking, concentrating, the glowing spot . . . a trembling arm to be steadied, preventing fluctuation of the beams of reflected light . . . a dull bit of aluminum to be wiped clear, its surface made brighter.

LONG minutes passed. The heap of powdered metal glowed under the mirrored rays, threads of smoke curled from it, but the desired combustion did not take place. Beads of sweat dotted Garth's face. Was the mixture impure? Did the mirrors fail to produce sufficient heat to start the chemical reaction? Through the window he could hear the sound of voices, movement,

within the barracks. Only a short time, now, before the Mercurian guards arrived to take them out onto the fiery, desolate plain.

"No go, Garth," Harker whispered tremulously. "Better to stop now, clean away the dust before the guards discover it."

"Wait!" Garth exclaimed. "There's a little time left! We can't stop now! Can't!"

Wallace, Ogden, grunted in assent, remained rigid, their burnished bows motionless in the sunlight. All eyes were fixed upon the heap of powder, the round, white-hot circle of reflected light.

Suddenly there were footsteps echoing along the corridor. The voices of guards, drawing nearer with each moment.

"You see!" Harker muttered. "Useless! We're..."

He broke off, staggered back, shielding his eyes with his arm. A white, searing flame, a gust of terrible, explosive heat erupted about the cell door!

Deep-throated cries broke from the captives. The entire middle section of the barred door had disappeared, leaving a mass of molten, glowing metal upon the floor!

"Out!" Garth roared. "Quick!" And in one leap he had cleared the molten pool, landed in the corridor beyond. Faces flushed, eyes burning, the others sprang after him.

Swarthy guards, dumfounded by this flaring hurst of heat, cringed against the wall, energy guns in hand. Three precious steps toward them, the racing prisoners gained, before they recovered their wits sufficiently to fire.

In the first blast of the energy guns fully half of the captives in the corridor fell. A terrible stench of charred flesh filled the air, as blackened corpses slid to the floor. Yet regardless of this terrible slaughter the remainder of the terrestrials plunged blindly forward

into the vortex of purple rays.

Garth, escaping the first volley, was in the front ranks of the attackers. He could make out, through the shroud of smoke, a fierce-eyed Mercurian leveling a gun at him. As the guard's fingers contracted about the trigger, Garth dove.

A blast of lambent purple energy swept above his head, scorching his hair; he felt his shoulder crash against the man's knees. There was a crash as the Mercurian's head struck the ground, and he lay still.

Snatching the gun from his hand, Garth cut down two of the other guards in a single sweep of flame.

"Get their guns!" he cried. "Their guns!"

Several ragged terrestrials obeyed. The remaining guards fell back, scrambling to safety. Before they could round the corner of the corridor, however, they had fallen before the hissing energy beams.

"Here!" Garth tossed a gun to Wallace. "Blast open the other cells, free the rest of the day shift! Quick!"

WALLACE, his bearded face aglow with fierce triumph, disappeared in the direction of the upper tier. Garth glanced at the bloody, grim-visaged remnant of his band, now hardly fifty and many of these badly burned.

"Harker, take ten men and clean out the guards in the left wing!" he snapped. "The rest of us'll get control of the entrance!"

Feet thudding on the steel floor, the group under Garth dashed toward the gates of the prison. Two sentries, attempting half-heartedly to intercept them, went down under a burst of purple rays. Several others, throwing down their weapons in surrender, were hastily bound with strips of tattered clothing.

Wild berserk rage had gripped the earthmen. All the pent-up hatred of

the past months was now focused upon their brutish captors. As they neared the great gates of the prison, they could hear shouts, screams of pain from the upper tiers, a joyful roar as Wallace blasted open the other cells.

A half-dozen Mercurians were assembled at the prison entrance, prepared to hold it until their comrades from the nearby barracks came to their assistance. At sight of the onrushing terrestrials, lean, vulpine figures, eyes blazing with the fierce light of battle, the guards lost heart. A perfunctory blast from their guns and they were racing toward the barracks. None of them reached their destination; they were mowed down before they were half-way across the court. But as the terrestrials sprang through the massive gates to secure their guns, a burst of fire from the guards' quarters drove them back to cover.

"No chance of taking the barracks that way," Garth said. "We'll have to wait. But first" . . . He crouched in the shadows of the doorway, aimed at the network of wires above the guards' quarters. A crackle of purple rays and the wires were swept away. "Sol!" Garth leaped back as an answering fusillade tore at the prison gates. "Now let them try to call Latath for help!"

The hallway was crowded with terrestrials, hundreds of them, now, from the other cells. A moment later John Harker reappeared; his band of ten had been reduced to six, but the other wing of the prison was free of Mercurians.

With the building in the hands of the terrestrials, the barracks held by the guards, a deadly sniping battle began beneath the great pink dome. The courtyard between the two buildings was a veritable no-man's-land. Sallies on the part of each party left it dotted with sprawling bodies. The battle for control of the camp now settled down into a slow double siege, each faction crouching behind windows, doors, pick-

ing off any unwary opponent who showed himself.

In a struggle of this kind the terrestrials' numbers were useless, while the superior armament of the enemy took a heavy toll. Garth, watching the ever-growing rows of dead and wounded lying in the corridor of the prison, frowned. In another hour, at most, the night shift of captives would be herded through the airlock, swept into oblivion as they entered. But their guards, well-armed, would be an added factor to deal with, a reinforcement for the hard-pressed force of Mercurians within the barracks. Gravely Garth studied the guards' quarters. If only there were some way of reaching it, other than by crossing the courtyard!

JOHN HARKER, his beard singed, his hand black from the backspit of his energy gun, ran toward Garth.

"Eleven more picked off in the last five minutes," he said. "We've got to do something, lad! At once, before the night shift arrives!"

"Right!" Garth nodded grimly. "And I think I know what it is!" He drew a second energy gun, taken from one of the prison guards, from his pocket. "You know that as long as the triggers of these projectors are pressed, they keep on spitting out their purple rays. For as long as fifteen, twenty minutes, until the charge fails. Now suppose the trigger of this gun were wedged in place to keep it steadily firing, and the gun thrown upon the floor? What would happen?"

"Happen?" Harker repeated. "Why it would clean out this room in thirty seconds! The recoil, slewing it around in circles, pointing the beam at every conceivable angle . . . ! Nobody could escape it!"

"Exactly." Garth replied. "Go tell the others to open up with every gun, keep the Mercs busy. I'm going to try something!"

Harker left the room and a moment later a fierce storm of rays broke about the nearby barracks. Hastily Garth pressed the trigger of the energy gun, wedged it with a bit of wood into place. Then, carefully keeping the thrusting purple ray pointed away from him, he drew back his arm, hurled the weapon through the doorway!

Whirling, spinning, the deadly beam lashed prison and guards' quarters alike as the gun curved through the air. An instant later, still spouting violet death, it disappeared through a window of the barracks.

Shouts, screams of terror, issued from the guards' quarters, and the fire from its windows abruptly ceased. The interior of the barracks was an inferno of flame as the gun's recoil sprayed the beam in every direction about the long room. Garth, watching, held his breath.

Suddenly a triumphant cheer broke from the terrestrials within the prison. In frantic haste to quit the ray-swept barracks, a score of Mercurian guards poured from the building, arms raised in token of surrender.

The earthmen dashed, grinning, from the prison, placed the Mercurians in one of the cells they had so recently vacated. No sooner had this been done, than a shrill siren echoed from the airlock. The night shift had arrived!

Garth sprang to the lock, tugged at its levers, and the massive circular door swung open. A long weary column of heat-suited prisoners stumbled from the air-chamber. They were followed by a dozen or so guards.

The leader of the Mercurians threw back his helmet.

"What's all this mean!" he growled. "What happened to the day shift?"

Garth raised his hand and a swarm of terrestrials, guns ready, surrounded the Mercurians.

"It means," he said softly. "That we, the earthmen, are in control here!

Throw down your weapons!"

With no choice, the guards obeyed. When they had been led away, Garth faced the stunned night shift.

"Arm yourselves from the arsenal," he cried. "Rest and eat! Tomorrow, as free men, we return to Latath, to capture it!"

CHAPTER VIII

BY dawn of the following day the terrestrials were rested, refreshed by their first decent food in months. Well-armed, clad in their heat-suits, they awaited the signal to leave for Latath.

John Harker, shaven, clean, stood beside Garth at the airlock; he seemed to have dropped ten years of age overnight.

"Think, lad," he whispered. "A chance to take their city, free our friends in the caverns! A chance to see Marcia again!"

"Marcia?" Garth repeated dully. Sudden, sharp memories overwhelmed him. His pact with Ysseth, the pact which would make it possible for them to enter the city, likewise separated him forever from Marcia. To go through the rest of his life, as the mate of an alien, cruel-eyed Mercurian woman! Abruptly Garth straightened up, turned to Wallace.

"Release the Mercs," he said. "We've nothing to fear from them if we leave no heat-suits, no guns, here." He waited for Wallace to return, then faced the liberated terrestrials. "All right, men! We've a big job ahead, a dangerous job, but it's got to be done. Let's go!"

A shout of assent echoed through the camp. Snapping their helmets into place, gripping their weapons, the earthmen began to file into the airlock.

The march across the arid desert was exhausting, the heat bitter, but the terrestrials, hardened by long months work on the reservoirs, the canals, made light of it. Past jagged spires of rock, pools of molten lead, great crevices, the earthmen made their way, grotesque robots in their metal suits. Lean, hard-bitten faces were smiling behind the tinted helmets, sharp eyes swept the plain for possible attacking forces. Hands resting on the butts of their energy guns, they swung along with sweeping strides, eager for the liberation of friends held captive in the caverns below Latath . . . for vengeance!

Garth, marching between Harker and the huge Wallace, was lost in a tangle of thoughts. The prospect of giving up Marcia stunned him. Yet if Ysseth lived up to her part of the bargain, betrayed her own people, he could not break his promise. Struck by the bitter irony of it, he filled his helmet with jarring laughter, strode on.

Night had plunged the plains into darkness when they came in sight of the city. Its lights, radiating with a soft pink glow through the immense dome, made it seem a luminescent rose-hued pearl, set deeply in a mounting of dark basalt.

As they approached the city, Garth motioned to the others to halt, glanced at the Mercurian time-indicator he carried. In the soft diffused light he could see that its hands pointed to the third hour. They had an hour to wait.

The interval seemed endless. At length the hands crept near the fourth marker. Garth stood up, motioned to the men to follow him. Very cautiously they drew near the huge dome, until they were opposite Ysseth's dwelling, marked by a dim cluster of lights behind the translucent glass-like shell.

From his belt Garth unhooked a small but powerful searchlight, such as the guards on the night shift had carried, snapped it in three quick flashes

at the dome. Then, after a brief wait, he repeated the signal. Suddenly he stiffened to attention. Three flashes, very faint behind the tinted dome, in answer! Ysseth had seen, understood!

HE raised his hand in a gesture of command, motioned for the others to follow him. Vague, bulky shapes in the ghostly radiance from the city, they glided toward the nearest air-lock.

Garth had barely reached the lock before its thick metal door swung wide. Springing forward, he and a hundred of his followers squeezed into the air chamber. At once the outer door closed, the inner one was drawn back. Air entered the chamber and the terrestrials opened the helmets of their heat-suits.

In the little room housing the lock mechanism stood three swarthy Mercurian sentries, and the slender, golden-skinned Ysseth. The guards peered into the shadowy lock, leaped back in amazement.

Before they could cry out, give the alarm, a dozen earthmen, guns in hand, faced them.

"Quiet!" Garth warned sternly. "One word and we shoot!" Then, turning, "Quick, John, let the others through!"

As Harker sprang to the controls of the air-lock, Ysseth came forward, her eyes very bright.

"I have done as you wished, Garth," she whispered. "You're mine, now . . . forever! The city is yours! Impossible for you to return to earth, with our armies in possession there! We will remain here, you and I, as rulers of Latath, of all Mercury! I give you a planet, Garth! What greater proof of my love!"

Garth stared at her, sick at heart. Marcia. . .

"I keep my promise," he said brusquely. "As soon as the city is ours. . ."

"Traitor!" One of the dark Mer-

curian guards, his lips twisted with rage, sprang toward Ysseth, energy gun in hand.

Quick as light Garth whirled, shot. The guard crumpled, pitched forward . . . but as he fell, his gun flashed purple death.

"Garth!" Ysseth, her lovely body torn, mangled, slumped to the floor. Then, like a faint echo, "Garth!" But even as he fell to his knees beside her, Ysseth's golden features had relaxed in death.

No time for regrets, no time even for thought. The flare of the guns had spread alarm to the neighboring posts, dark figures were running toward the air-lock.

"Take off your heat-suits!" Garth cried. "They'll only hamper your movements! Quick!"

Hastily the terrestrials stripped off the clumsy suits, sprang into the fray. Those already within the city formed a ring about the lock, to hold it until the rest of their force could come through.

Latath was awake now, ablaze with lights. Shouts, cries, echoed along its streets, and the darkness about the air-lock was laced with purple rays.

More and more of the terrestrials were entering; before twenty minutes had passed, the entire force of several thousand was beneath the great dome. Fighting desperately, the Mercurian guards were pushed back toward the center of the city, leaving a trail of dead and dying behind them. Purple energy rays stabbed the gloom, illuminating gardens, tall white towers, massive buildings with a lurid unnatural light.

WALLACE, a wild-eyed, sooty spectre, surged forward with Garth and Harker.

"They're breaking!" he shouted exultantly. "In another half hour we'll have the city!"

Garth, his gun spouting livid jets of

death into the groups of defenders, shook his head. The resistance was stiffening as warriors from the other, more distant quarters of the city entered the struggle.

Suddenly a fierce shout was heard on their left. Hune, followed by a hundred or more attendants, servants, had joined the defenders. Outnumbered, weary from their long march across the plains, the terrestrials began to fall back. Their opponents, familiar with every alley, every garden path, every clump of vegetation, remained largely under cover; flitting from shadow to shadow, they poured a deadly fire into the decimated ranks of their adversaries. Stubbornly the terrestrials fell back toward the air-lock.

Garth fought like a madman, trying in vain to stem the tide. A purple flash from the terrace of a nearby house churned the ground at his feet. Automatically, he fired in return, saw a dark figure topple from the parapet. But for each Mercurian slain, there were a dozen more to take his place, and the odds were now overwhelming. Garth attempted to prevent the retreat to the air-lock. If ever they were forced from the city, back onto the plain, it was only a question of a few moments until, without the air-tanks of their heat-suits, they died of strangulation.

All at once he recalled the small, stout structure housing the elevator that led to the underground caverns. If they could go below, release the slaves in the workshops, the foundry. . . .

"This way!" he shouted. "Here! Ogden, pass the word along to fall back toward that small round building on our right! Quick!"

Grudgingly the terrestrials retreated toward the shaft-head. It was deserted, its guards had left to join the struggle in the streets. Garth pushed open the massive metal doors, saw that the elevator was at the surface.

"Inside!" he shouted. "Hurry!"

We'll be safe enough below ground, be able to free the workers to help us! . . . find them arms!"

In the building, pell-mell, the exhausted, wounded earthmen dashed. Garth and a picked few remained outside, staving off the attackers as the elevator made trip after trip, taking the terrestrials to the caverns.

At length the others had all descended. Garth and his band sprang toward the door. As they did so, a burly Mercurian officer plunged forward in pursuit.

Garth fired at the man but his gun's charge was exhausted. He hurled the weapon at the officer, saw him drop, then raced into the building, slammed, bolted the heavy doors.

INTO the elevator they leaped, commenced the descent. Above them they could hear a hammering at the doors of the building. Downward the car dropped, swiftly. Just as it reached the shadowy caverns, they heard the sound of footsteps . . . shouts, far above. Quickly they sprang from the car into the workshops. No sooner had they done so when a blast of purple rays lit up the elevator shaft and the cables of the car fused, melted.

"Good God!" Harker clutched at Garth's arm. "Look! We're trapped! No way to reach the surface!"

"Don't worry about that now," Wallace cut in. "We've work enough here!"

The great caverns were a scene of confusion. Already the men from the plains had overcome the few Mercurians left to guard the workshops, were busy cutting the shackles that bound the slaves. Bewildered by this unexpected deliverance, the workers seemed at first dazed, then, as realization sank into their toil-numbed brains, they gave way to wild rejoicing. Tools, broken chains, were hurled into the blazing furnaces, hated machinery smashed, crude weapons fashioned from

odds and ends of apparatus.

Suddenly in the midst of this wild rejoicing, a man came running toward Garth, his face like putty.

"The air-vents!" he cried. "The Mercs have closed them, sealed the top of the elevator-shaft! We . . . we're doomed!"

John Harker gripped his belt, very pale.

"Any chance to dig our way out?" he demanded. "A slanting gallery, maybe, to the surface?"

The worker shook his head.

"Impossible," he muttered. "It would take days. And the air here below won't last twelve hours."

For a moment no one in the little group spoke. Wallace, squinting into the dimly-lit caverns beyond, gnawed reflectively at his lower lip.

"Suppose we knock out the pillars that hold up the roof of one of those smaller caves," he rumbled. "D'you suppose the ceiling might give way, leaving an opening to the surface?"

"Wallace! You've got it!" Garth slapped the big man's shoulder. "Tell the others! We've got to work fast!"

With picks, with sledges, with energy guns, they attacked the huge pillars of living rock that supported the roof of one of the lesser, more remote caverns. Trained to toil, the freed slaves, Mercurians and terrestrials alike, made deep clefts in the supports, while the energy guns blasted with crackling violence at the stubborn stone.

Hours of killing labor passed, and as the moments fled, the air grew foul, noxious. Gleaming muscular bodies drooped, fell exhausted to the floor of the grotto, were dragged clear by their companions. Time lost its meaning, was gauged only by the depth of the niches in the rocky pillars. There was no sign from their enemies on the surface; confident that the lack of air must soon do its work, the Mercurian overlords waited.

How long he worked, Garth never knew. It seemed that for days, weeks, he hacked at the dark flint, swinging the sledge until his arms, his body, were numb. There was no sound other than the ringing of metal on stone, the hiss of energy guns, the gasping of men as they fought for breath. The caverns seemed filled with fantastic shadows, though whether they were real, or phantoms of his aching brain, Garth could not tell.

THEN all at once there was a crackling, splintering sound, a warning rumble from somewhere above. Dimly Garth was aware of shouting a warning, of dragging a limp figure from the cave.

Suddenly the world was a hail of flying rock, of shattered stone. The crash and roar were deafening, while the adjoining cavern in which they sought safety, rocked like a storm-tossed ship.

Dazedly, Garth picked himself up. Soft pink-hued sunlight flooded the underground workshops, and air, sweet, clean air, swept through them. He drew a deep breath, felt the blood race through his veins.

"It . . . it worked!" he exclaimed. "Up! Quick, before the Mercs get over their surprise!"

The tattered, weary figures about him sprang forward, over heaps of rubble into the great pit that now gaped in the center of the city. Up its steep slanting sides, they swarmed, pouring to the surface like a legion of devils from the nether world. Brandishing energy guns, iron hars, flailing chains, they fell upon the startled Mercurians, drove them back in disorder.

It was no battle, this time. The men of Latath had suffered heavily in the struggle the night before, and were disheartened by the reappearance of the terrestrials, greatly reinforced by the slaves from the caverns. They had counted on an easy, bloodless victory by cutting off the air vents. Now,

completely surprised, they fell back toward the great citadel-like receiving station.

Vainly Huno and his band tried to check the rout. The Mercurians, old men and boys for the most part, lacked the courage and training of the warriors, now away on earth. Driven back by the furious wild-eyed slaves, they retreated toward the receiving station. In less than an hour all of Latath except the towering bullet-shaped citadel was in the hands of the terrestrials, the cavern workers.

CHAPTER IX

GARTH ARLAN stood before the circular window of Huno's palace, staring with narrowed eyes at the city beneath him. It was quiet, very lovely in the soft pink radiance that streamed through the dome. There were no signs of the recent struggle other than the gaping pit above the caverns, the dark stains upon the white marble streets.

About the citadel, however, there was activity. From behind hushes, heaps of earth, the freed slaves kept up a steady fire at the massive gray walls of the receiving station. Pale violet beams played incessantly upon the reinforced masonry, bathing it in lamhent light. From the loopholes that broke the otherwise smooth walls of the citadel, there was only an occasional reply; the Mercurians were husbanding their energy charges.

Garth frowned. All days, since their escape from the caverns that morning, the earthmen had blasted at the fortress; and apart from the pitting, the erosion, that scored its surface, they had made no headway. Time, precious time, was being wasted. And if the Mercurians recalled their armies from earth, the rebels must certainly go down in

defeat.

The click of a door interrupted Garth's reflections. Harker stood in the entrance, his eyes troubled.

"Any news?" Garth demanded.

Harker shook a disconsolate head.

"Nothing. We've searched the entire city. Humo must have taken her with him when he retired to the citadel." He stared through the window at the towering massive fortress. "Marcia . . . a hostage in the hands of those merciless devils!"

"Nothing we can do, John," Garth muttered. "Days, perhaps, before we're able to blast a hole in those walls. They're made of Mercurian *zorite*, ten times as hard as flint. We'll just have to keep plugging away . . . and hoping."

"But the place is bound to fall sooner or later," Harker exclaimed. "Madness for them to try and hold out! They must understand that we've men and guns enough to take it in time. If we could make them realize . . .!"

Garth's face was drawn, gray, as he shook his head.

"I've tried to communicate with them," he said slowly. "Tried to reach them a dozen times by television. . . ." his eyes flicked toward the cabinet nearby . . . "but got no response. Don't forget the receiving set, the matter transmitter, is in the citadel . . ."

He broke off as a soft, buzzing sounded in the television cabinet.

"John! They are trying to contact us! Must be them!" Garth bent over the viewplate as another insistent drone rose from the machine. "Yes?" he barked.

FOR a moment the silvery mirror was blank. Then slowly a face began to come into view . . . a pale, poignant face, surrounded by a mass of dark curls.

"Marcia!" Garth exclaimed. "You . . ."

"Quiet!" the girl whispered. "Lis-

ten! I managed to slip by the sentry, enter the communications room here! They may spot me at any moment! You've got to capture this place, now, Garth, before tomorrow morning, or there's no chance . . . ever! Humo has called earth, ordered every man there to return! Already they're assembling the army at the big San Francisco station, to be flashed across the void by dawn! Unless you can capture the receiving set here in the citadel before they arrive . . ." Marcia's voice broke in a smothered scream.

John Harker, peering over Garth's shoulder, gave a gasp of rage. In the viewplate they could see a dark, scaly arm pass about the girl's slender neck, drag her from the screen. Then Humo's face, dark, sardonic, appeared; his many-faceted eyes were mocking.

"I regret the interruption of this pleasant reunion," he said suavely, "but I cannot permit my household slaves to communicate with rebels. By morning you and your rabble will be destroyed by our returning forces. The walls of our fortress will keep us safe meanwhile. A pleasant evening, earthmen! Until dawn, then!" Laughing, he snapped a switch and his saturnine countenance faded from view.

For a moment the two terrestrials were silent. Then Harker spoke, his voice trembling.

"Their armies on earth!" he cried. "Returning! We've got to get control of the citadel, free Marcia! Now! All our work, our sacrifice in vain! Perhaps if we make an attack . . ."

"An attack?" A deep voice boomed. "What nonsense is this about an attack?" Wallace stood on the threshold, his huge frame filling the doorway. He was dirty, ragged, marked by a score of deep burns. "How can we attack, John, without a breach in the walls? And there'll be no breach for some time to come, with only these small energy guns to work with. If we

had big, powerful ray projectors like the Merc army have on earth . . ."

"On earth!" Garth snapped. "Not for long! They'll be here by dawn! Broken down into electro-magnetic vibrations, shot across space to the receiving station in the citadel! And when they get here, we're through!"

"Returning!" Wallace's face fell into grim lines. "Then we're helpless! No way to stop electro-magnetic vibrations, prevent them from reaching the receiving station! You're right, John! Better to go out in an assault now, however useless, than wait for the Merc army to arrive, destroy us! I'll go tell the men to prepare ladders . . ."

"No! Wait!" Garth swung from the window, his eyes suddenly bright. "There may be another way! Interference! Static, like that distorting radio waves! If we could build a small projector, just powerful enough to create interference . . .!"

"Static?" Harker echoed. "What do you mean?"

"Listen!" Garth snapped. "You've heard an entire symphony orchestra, united in a single chord. Suppose one musician struck a false note, created a discord? The whole effect would be ruined! Or a radio transmitter, broadcasting on the same wave-length as another station, could garble, ruin, its reception! These waves of electro-magnetic energy are akin to radio waves, except that they're directional, sent in one beam! Suppose we were to send out a small directional beam in the same line as that of the one coming from earth, of similar wave-length! We'd distort it, create interference!"

"GARTH!" Harker gripped his arm, excitedly. "It's incredible, yet there's no reason why it shouldn't work! If we could keep their armies from being recreated into matter until we gain control of the citadel . . .! But how would it work? What would

its effect be?"

"I'm not sure," Garth replied, "but I'm going to find out!" He turned to Wallace. "We've got to work fast! It's questionable whether we can do such a job overnight! Still, there's equipment in the caverns . . . plenty of it, and the finest! Go get me a hundred men, men who worked in the underground factories, know the ropes! Mechanics, engineers, laborers! I'll need you, John, most of all! I'm counting on your remembering the plan of that first set we huilt back on earth! Come on . . . we're starting work right away!"

In less than an hour, just as the sun was fading below the lower rim of the tinted dome, a hundred men were desperately busy in the caverns beneath Latath. Except for the one cave which they had undermined, the subterranean workshops were intact. Blue flame leaped within the huge electric furnaces, lathes, drills whirled, screaming as though in complaint, hammers clattered and rang, while the masses of machinery sang a song of power.

It was in these grottos that the Mercurians had huilt their matter-transformation sets, and the apparatus, the necessary material, lay ready at hand. Of the Mercurian slaves, more hitter than even the terrestrials against their former masters, there were some who had helped construct the first sets. These Garth placed in command of gangs, gave the more intricate jobs.

He and Harker, relying upon memory, drew rough plans, diagrams of the delicate mechanism. They would have given anything, now, for the green tablets which, hearing the directions of the Mercurians, had caused earth such sorrow.

The original hundred workers were augmented by many others before the first hour, leaving only a small force to continue the blasting of the citadel walls. A sortie by the besieged would have swept the little band of assailants

to sure defeat; but unaware that the bulk of the terrestrials labored below ground, and confident in the early arrival of their forces from earth, the Mercurian overlords passed the night in feasting, celebrating the victory that seemed inevitable at dawn.

The great caverns were like some fantastic fabled workshop of gnomes. Dwarfed by the masses of machinery, the earthmen toiled desperately, battling against time. Piece after piece of fragile mechanism was completed, to be assembled by Garth and Harker. Slowly the shimmering, intricate device took shape, yet with each inch that it rose from the ground, precious moments slipped by.

Garth, pausing for a moment's breath, glanced about him. Sweat-dampened bodies, gleaming weirdly in the blue glare of the electric furnaces, threw sprawling shadows upon the rocky walls as they hammered at some tough piece of metal. Smoke, black, choking, swirled through the workshops, giving them a dim air of unreality.

Suddenly Wallace appeared, clutching a coil of wire in his grimy hand.

"That piece for the spark-gap," he muttered. "What next?"

"**H**ERE!" Harker handed him a chalked diagram. "Silver, three-sixteenths of an inch, pierced for bolts here, and here! How about the cathodes!"

"We broke the first set," Wallace flung over his shoulder. "A flaw in the metal. We've started on new ones . . . ready in an hour, barring accidents."

Garth bent, fitted the coil into place above the spark-gap. Futile, it all seemed. Already half the night had passed and the worst of the job remained. The tubes, the helix . . . And the work was clumsy, make-shift, crude. Nor was there any assurance that his

plan would succeed even if the set were completed in time. He shook his head, then plunged into the task once more as Ogden approached with questions concerning some complicated bit of mechanism.

While Garth and his men worked frenziedly beneath the city, Marcia stood in a corner of the citadel's main hall, watching Huno and his men as they celebrated the morrow's certain victory. Seated about a long table the dark Mercurians were laughing in ribald merriment, passing goblets of greenish, aromatic liquor, the powerful Mercurian *kalo*, from hand to hand. At one end of the room a soft-toned multiphone beat out its throbbing, insistent rhythm, while slave-girls, some slim, golden Mercurian women, others, like Marcia, terrestrial captives, carried dishes laden with curious, synthetically-prepared food to and from the long crowded table.

"A toast!" one of the Mercurian Thantors cried, staggering to his feet. "To the return of Zagar and his armies, to the death of the rebellious earthlings!"

A harsh cry of approbation resounded through the hall and the guardsmen drank. Huno rose, his eyes like points of flame.

"To the death of their leader, Garth Arlan!" he cried.

Marcia, bearing a heavy platter, swayed, stumbled. They were drinking to the death of Garth! She drew an agonized breath, and with her cheeks damp with tears, placed the platter upon the table.

"Soon" . . . Huno tossed his goblet, empty, to the floor . . . "soon there will be an end to this fighting, this confusion, and we can devote ourselves to more pleasant pursuits." He smiled narrowly, his gaze sweeping Marcia's slender form.

With a shudder the girl drew back from the table, stepped into the shad-

ows about one of the tall narrow loopholes. Below, an incessant stream of violet light played upon the stout walls of the citadel. From time to time, as the small energy guns blasted with crackling force at the heavy masonry, the flinty *zorite*, there was a splintering noise, a crash of falling stone. A structure of earthly build would have crumbled at once under such an attack, but the strongly-built Mercurian citadel gave way very slowly before the fury of the rays.

Marcia shook her head. Only a few hours remained until dawn and the walls showed little signs of yielding. And when the Mercurian army emerged from the energy-transformers, their overwhelming numbers, their powerful weapons, would easily crush the revolt. Garth, her father, doomed to destruction, while she . . .

A harsh shout of command from Huno drew her from the window. Hastily she ran to fill his goblet. The feast was growing uproarious. Choking with despair the girl listened as Huno jubilantly outlined the morrow's attack.

FALSE dawn's pale radiance, showing faintly through the glass dome, revealed Garth and John Harker standing on the terrace of Huno's palace, making final adjustments of the gleaming mass of machinery before them. Small, this generator of electro-magnetic waves, and lacking in power. Yet upon its slight, feeble beam hung the future of two planets.

Harker straightened up, wiped grease-stained hands upon his ragged trousers.

"Ready!" he said soberly. "May God grant it does the trick! If only there were time to wrap another coil, adjust that oscillator . . ."

"No chance for that, now!" Garth muttered. "Tell the others to be ready for a last attack if we should fail!"

For a moment the two men remained

silent, haggard spectres in the dim light. A thousand memories flashed through Garth's mind. The days at the old mission before the coming of the Mercurians . . . his meeting with Marcia, the moments they had spent together before the dark invasion . . . the destruction of San Francisco, the conquest of the west. His own journey to Mercury through the medium of the stolen water . . . Ysseth . . . the labor camp . . . the fight for the town. And now . . .

He watched the endless streams of purple energy blasting at the battered walls, the figures of his men crouching behind their barricades. In a few more minutes the triumphant Mercurian army, flushed by their conquests on earth, would return to scatter the rebels who threatened their home city. Unless this hastily-built machine worked . . .

"Garth!" Harker gripped his shoulder, pointed. Light, the soft light of dawn, flowed at the edge of the great dome!

With a swift movement Garth sprang forward, tugged at the roughly-made levers, the crude switches! Humming movement surged through the mass of fragile wires and a pale light emanated from the copper helix.

"Pray, Garth!" Harker whispered. "Pray!"

Within the citadel there was excitement, an air of expectation. Preparations for the return of their armies from earth were being completed by the besieged Mercurians.

In the huge power-plant small figures bent over control-panels, awaiting the signal to commence their work. The mighty engines which had received the torrent of water from earth were silent, as though resting in preparation for the reconversion of the waves of electrical vibrations into marching legions of fierce fighting men.

The rows of galleries, tier on tier up into the shadowy reaches of the ceiling,

were packed with Mercurians, silent, eager, awaiting the return of their warriors, laden with the spoils of earth. Dimly from outside they could hear the incessant hiss of energy guns as the terrestrials blasted doggedly at the massive walls. Small heed they paid to such futile attacks . . . one regiment of their warriors could crush this band of rebellious slaves.

Huno, a dark elegant figure in his metal tunic, stood near one of the control panels; his expression was sardonic, and he showed no effects of the night of revelry. His gaze swept the retinue about him, singled out Marcia.

"Come!" he said softly. "To you a place here in the front ranks, where you may watch the return of our forces!"

SILENTLY the girl obeyed, sick at heart from his mockery. The fighting men of Mercury, coming back to destroy Garth!

Suddenly light flashed on a board, a buzzer whined. Huno went rigid.

"They're here!" he shouted. "Our warriors from Terra have returned! Open the receivers!"

A roar of triumph echoed through the plant, and the huge machines hummed with power. Marcia, standing beside Huno, bit her lip as a jet of light swept downward from the immense copper helix. In another instant they would be here, endless columns of savage soldiers. . . .

Suddenly Marcia gasped, and her knees went weak. Huno swore, and the roar of triumph turned to a cry of sheer horror!

Figures were issuing from the beam of light . . . but what figures! Fierce, swarthy heads, joined grotesquely to scaly arms . . . bodies without legs, with hands protruding from their chests . . . torsos with three feet and nothing more! And the ghastly shapes were alive . . . horribly, terrifyingly alive!

Here five arms, connected to a shape-

less mass of flesh, crawled crab-like, forward. Here a dark form, a head protruding hideously from its back, struggled with the rags of purple and metal that enswathed it. Here a revolting monstrosity with double body and stumps of feet dragged itself forward. Screaming wildly, they stumbled from the machines to die!

The space beneath the helix was piled high with distorted, awful figures, a writhing jumble of arms, legs, bodies. And still from the beam of light they came, more ghastly than before!

Through dazed, panicky eyes Marcia stared at them, frozen with horror. A figure with two heads dashed screaming from the mass of flesh, fell groaning to the floor. Baroque travesties on human life rolled across the polished marble, dying. And still the maimed, twisted, incredible shapes appeared!

The big room was in an uproar. Mercurians who gathered to witness the return of their victorious armies, fled in panic to escape the hideous spectacle. Every entrance was jammed with fugitives in mad flight. Frenziedly they rushed to the great arched doorway through which the water from earth had poured, tore open the massive gates, streamed along the dry bed of the canal into the rose-pink city beyond.

Suddenly Huno found his voice.

"The earthmen!" he screamed. "Close that entrance! Quick!"

But his warning came too late. Huno's efforts to rally the horror-struck Mercurians were in vain.

ALL at once from outside there came a thunder of deep terrestrial voices. The attackers, cleaving the frantic stream of fugitives, burst into the citadel. A crackle of energy guns rose above the screams, the hoarse, frightened shouts.

"Gods of Mercury!" Huno whispered, drawing his own weapon.

Through the clamor sounded the tri-

uniphant cheers of the earthmen as Garth, followed by a band of ragged terrestrials, dashed into the great hall that housed the power plant.

Eyes blazing hatred Huno crouched before the switchboard, swung his gun toward Garth. Viciously he pulled the trigger . . . and the gun missed fire. Garth plunged forward, caught Huno about the waist and spun him against the wall. Harker, rushing to his comrade's assistance, raised his energy gun, fired.

A bubbling scream burst from Huno's lips; he toppled face downward to the floor. The first of all the invaders that had overrun earth was dead.

"Garth! Dad!" Marcia ran toward them, her face white. "What . . . what is it?" She pointed in horror at the ever-mounting heap of hideous, writhing monstrosities before the machines.

"Interference!" Garth replied grimly. "A similar ray of vibrations, distorting this one!" He turned. "Wallace, send a man to shut off the interfering beam! It's done its work! As the rest of the Mercs come through, we'll be here to disarm them! Hurry!"

A few minutes later the flow of ghostly figures ceased. Warriors, intact, unharmed, marched from the beam of light. Stunned by the sight of their hideous dead comrades, covered by the terrestrials' guns, they threw down their weapons in surrender.

Within an hour the remains of the Mercurian army had returned from earth, were being driven, unarmed, along the bed of the canal into the pink-domed city beyond. When at last the marching figures ceased to materialize before the machines, Garth turned to the ragged band of terrestrials, reduced by constant fighting to less than five hundred, and gave crisp orders.

"Bar the doors!" he commanded. "By the time they succeed in getting back into the citadel, the power plant, we'll be on our way to earth! On our

way home!"

Joyfully the men from Terra obeyed. Led by Garth and Marcia, they stepped into the ray of light beneath the helix.

Once again that sound of rushing music, that dazzling light. Suddenly they were in the great stone sending station at San Francisco, breathing once more the fresh cool air of earth!

The few Mercurians left to guard the transmitter were quickly overcome, dispatched to their home planet. Jubilant, the liberated terrestrials poured from the great gloomy building into the clean yellow sunlight beyond.

Three weeks later Garth, John Harker, and Marcia stood on a hilltop overlooking the ruined city of San Francisco. Armed with the energy guns they brought back from Latath, the returning terrestrials had easily captured the remaining Mercurian outposts, sent their prisoners back to the domed city on the rocky plains of their home planet. Nor, remembering the terrible interference beam, had the dark invaders attempted to return.

GARTH, his arm about the girl's shoulders, nodded to Harker. Marcia's father bent, pushed a plunger. Suddenly a tremendous roar shook the harbor and the big transmission station which had sent so many millions of gallons of water, so many frightened slaves across the void, disappeared in a cloud of flying debris; of smoke!

Watching, Garth nodded gravely.

"The last of the receivers," he murmured. "Communication with Mercury shut off forever!"

The girl glanced at the stricken city below. Already men were at work clearing away the ruins, rebuilding.

"A new civilization, a new world," she whispered. "And a new life, Garth, for you and me!"

Garth said nothing, but his arm tightened about the girl's shoulders . . .

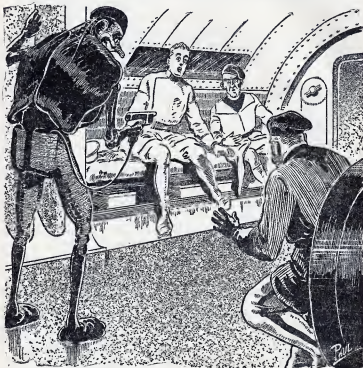
THE END

DISAPPEARING SAM

by R. R. WINTERBOTHAM

Author of "The Second Moon," etc.

Py Hatney, Interplanetary flatfoot, had this problem: how to catch up with a super-scientific criminal who knew the secret of invisibility!



It was the Martian, Pagh, with a proton gun which he pointed at Py Hatney

PY HATNEY, the interplanetary flatfoot, braced himself against the door of the squalid rooming house, six kilometers from Orfo, the Venusian spaceport.

About him rolled the dense, fetid atmosphere of the sun's second planet, so dense that the air blotted out the figures of three burly, scale-skinned Venusians, each of which wore the familiar figure 8 insignia on their caps, marking them as

commissioned officers of the Interplanetary Service. Py himself wore one of these on a shield inside his coat.

The door creaked under Hatney's weight. Another push and it gave beneath Hatney's earthborn strength. Then Py Hatney and the two Venusians plunged into the room, training proton guns on a small, lithe earthman who rose suddenly from the bed.

"All right, Sam," grinned Hatney.

"I guess we've got you for keeps this time. Where's your machine?"

Sam Glezer, better known to the police of the solar system as Disappearing Sam, blinked his eyes in a solemn denial.

"Machine? I haven't a machine," he averred. "I've got a sort of sixth sense."

Hatney pinked in anger and shoved his chin into the face of his captive as he said: "You don't think I'm going to swallow that, do you? I've chased you over six planets. I spent a fortune hiring a two-passenger rocket to catch you here on Venus. I'm going to find out how you vanish like water on the moon or I'm going to fade away myself!"

"You better take some lessons first," grinned Disappearing Sam impertinently. "I've the secret of invisibility. I can make myself perfectly transparent."

"You're something of a scientist, Sam, but even you can't make anything perfectly transparent. Even air isn't perfectly transparent."

"You gotta admit I can vanish, though."

With a snort Hatney snapped handcuffs over the smuggler's wrist. Familiar as the terrestrial detective was with the man who had escaped from him ten times, Detective Hatney could hardly convince himself that this small, insignificant fellow could outwit the resources of the Interplanetary Police. Yet Hatney had seen Sam disappear like a picture from a television screen, only to bob up again later, solid and real as Jupiter.

These fadeouts had occurred often enough to convince Hatney that two things were necessary: first there had to be an open door or window in the room, and second, Sam could not disappear while he was shackled to any person.

Hence, the first act of Detective Hat-

ney was to cuff his prisoner to himself.

Hatney turned to the Venusian officer, the leader of the three who had assisted in the capture.

"Get us back to the spaceport, Val," snapped Hatney. "If we make it without letting this ghost get away, I'll be your friend for life!"

Val, the Venusian, hesitated.

"You go back to Earth now?" he asked in the clipped Venusian accent.

"You're darn tootin' I'm going back to Earth now. Sam here has slipped away from me ten times and the sooner I get him locked up on Earth, the sooner I'll start gaining back the pounds I've lost chasing and worrying over him."

"We help you, now you help us?" asked the Venusian.

"Cripes yes, man! I'll help you any time you say, except now. Don't you understand that this man is hot—like sunspots? He's the most wanted and hardest to catch smuggler in the universe. Your government ought to consider it a favor to be rid of him!"

"YOU must help us now!" spoke the Venusian. He turned to the foremost of his two companions and uttered a few words in the unintelligible jargon of the planet. The second Venusian grinned idiotically from his lipless mouth and then held out a huge box, a quite heavy box, fastened with a dozen small combination locks and studded with heat resisting bolts.

"What's this?" glowered Hatney.

"The Venusian ruby, you mug!" came from Disappearing Sam. "What'd you think I was on this planet for?"

"Him not the only one who wanted it," spoke Val as he indicated Sam with his long, pencil-like fingers. "Pirates also lay plans to steal ruby on trip to Earth. Pirates never suspect that ruby fly to Earth on two-passenger rocket instead of big transport. You take ruby and you save many lives."

"Go ahead, Py," urged Sam. "Take

the ruby and save lives. I never did like pirates because they're too rough. I don't have to murder to make a living."

"He just wants that rock in easy reach!" protested the detective. "You don't know him as I do."

"Just same, even so," said the Venusian. "Ruby much safer on two-passenger rocket than on big transporter."

"Well," shrugged the detective. "It's your ruby, not mine."

The appellation, two-passenger rocket, was a misnomer, since the craft carried four men. Two of these, however, were the pilots who worked in shifts in a partitioned control room just ahead of quarters for two passengers. There were sleeping and cooking quarters for the passengers, but little room to spare.

Veele, the senior pilot, was standing in the locks when Hatney, carrying the ruby, boarded the rocket with his prisoner. Quickly Veele aroused the second pilot, a long, slender Martian named Pagh, whose shell back bore the scars of many a space battle.

As the ship was primed for the take-off, Pagh glanced suspiciously at the heavy box Hatney shoved beneath his hunk.

"What's that?" he asked in the clacking voice peculiar to Martians.

"None of your business!" returned the detective sharply.

"I've got to have its mass so we can compute our orbit," growled the junior pilot.

Cautiously Hatney shut the outer locks and in lowered tones he disclosed what was in the package. The Martian nodded and bent over the calculating machine.

A few seconds later the rockets roared and the ship thundered upward into the Venusian stratosphere.

Detective Py Hatney sat down beside his prisoner on the edge of one of the

two hunks in the room.

"Supposing we talk about this disappearance business," began the detective.

"Gladly," grinned Disappearing Sam. "It's one subject I'm full of."

"I'm glad you're beginning to see the light."

"There are eight ways to make a man invisible," began Disappearing Sam. "The best way is to remove him from our sight—"

"Tryin' to be funny, hey?"

"—not in the least. I simply want to be thorough. Another way to disappear is to make a thing perfectly transparent—but you've already pointed out that it requires science beyond our present level to do.

"We might utilize a fourth dimension, but unfortunately that also is rather impossible for a creature that lives only in three dimensions and can't project himself into the fourth.

"There was a suggestion once that light rays might be bent around a body so that a person can see behind that body. But this would not work at close range because light rays bend rather slowly.

"Another method of getting invisible is to turn off the light—then everything becomes invisible; or we might make an object a perfect reflector in which case we would see nothing of the object itself, but we would be aware of its presence from the reflection.

"The seventh method of becoming invisible is to take away a dimension of an object—making it two dimensional instead of three—and turning it sideways—"

"Well, how do you do it?" asked Hatney impatiently.

"I do it the simplest way of all, the eighth method of invisibility—a method perfectly possible under present day science as it has always been since modern science was understood."

"Well?"

"Why, Mr. Hatney? You don't think I'd tell you! It would spoil all my fun!"

AT that instant there was a cry of alarm in the control room in the fore part of the craft. This was followed by the sharp hiss of a proton gun explosion.

A second later the connecting door between the cabin and the control room swung inward and in the opening appeared the beaked visage of the Martian, Pagh, with a gun which he pointed directly at Py Hatney.

The detective sagged helplessly in his chair. The alarm and shooting had occurred so suddenly that he had been caught completely by surprise.

"We're fifteen million miles off Venus," spoke Pagh. "We can't be seen by the largest telescopes of either Earth or Venus so our halt will not be noticed. I've just had to put our senior pilot, Veele, out of existence because he was so foolish as to try to shoot me when I ordered him to surrender—"

"But why? Why all this rough stuff?" asked Sam innocently.

"Within a few minutes a pirate ship will take us in tow," spoke the Martian suavely, holding the proton gun listlessly in his webbed left hand. "That ruby is worth quite a bit of rough stuff, don't you think, Mr. Disappearing Sam?"

"It's worth quite a bit, but nothing's worth murdering for," replied Sam.

The Martian shrugged.

"It's all a matter of taste, but if I were Detective Hatney, I'd keep my hands away from my gun. The slightest movement in that direction might make me nervous."

As Pagh spoke there came a scraping bump outside. Sam heard the grappling irons ring against the metal plates of the small rocket and a second later Pagh had swung open the locks.

A hollow tube-like boarding passage

had been thrown across the gap between the two space-craft and a coarse Earthman was crossing to take over the craft.

"Nice work, Pagh," smiled the Earthman.

"Cutthroat Jing, or I'm a pick-pocket!" gasped Sam. "I heard you were in this bloody pirate business—"

"Shut-up, you!" growled Jing as he glared toward Sam. Then the pirate turned to Pagh. "What's the setup? What's this man doing on board? I got your radio call, but I didn't know you had this small time smuggler aboard. Is he—"

"The other man's a detective, taking Sam back to the States," explained Pagh. "But they're also carrying the ruby."

Jing whistled. Then he laughed.

"At least we won't have to blast the ship and let the telescopes on Earth and Venus catch the flash. Just take the other pilot aboard our ship and turn these two loose. Sam'll be blamed for everything."

"The other pilot is dead, sir," explained Pagh.

Jing roared while Pagh pulled the Venusian ruby from beneath Hatney's bunk.

"This'll be about the last disappearance for Disappearing Sam!" he chortled.

Hatney's teeth were clicking like castanets as Jing and Pagh went back into the locks toward the pirate ship. Then the detective turned to his prisoner.

"Wh-what are we go-g-going to d-d-do?" he asked.

"If you'll take these bracelets off my arm, I think I can make you a hero," replied Disappearing Sam. "It's not generally known but I used to be a licensed space pilot. Lucky thing or we'd drift endlessly in space, which was what Jing expected us to do."

With hands so nervous that they almost dropped the key, the detective un-

locked the cuffs. His was not to reason why at this point. The space ship was at a great distance from all possible aid and Detective Hatney could not operate either a radio or the ship itself. The only hope lay in Disappearing Sam.

Sam sprang into the control room. He glanced at the lifeless body of First Pilot Veele and swept up a blanket from the bunk to cover it. Then he closed the door on the detective.

"You ain't g-g-going to l-l-leave me?" came Hatney's pleading voice.

"Now, flatfoot, is that nice?" asked the smuggler. "After all we've been to each other?"

In the concealment of the control room, Disappearing Sam was working rapidly. He lifted his right hand to his left shoulder. His fingers worked close to his collar bone until suddenly, with a sharp *click*, the arm split into two halves, revealing a hollow space within which was a compact little machine.

"When I lost that arm in a spaceship crash, I never realized how lucky I was," said Sam as he started the motor.

JING and the Martian, Pagh, reached the control cabin of their ship. Jing touched the controls and the motors sent vibrations through the ship.

"We're not moving!" exclaimed Jing.

Pagh looked out of the porthole of the ship toward the two-passenger craft that had been cast loose a few minutes before.

Then as he looked at the small craft it suddenly vanished before his eyes!

"Great guns, Jing! It disappeared!" exclaimed Pagh.

"What?"

"The two-passenger boat. It faded away like a ghost!" The Martian's greenish skin bleached in fear. Jing, who had stepped to the porthole, gave a gasp of astonishment.

"We're moving now!" he blurted. "Something is dragging us toward the Earth!"

Jing's voice roared into the speaking tubes. All hands were called to their battle posts. Huge disintegrators were loaded and fired in every direction. The flames of atoms reached out to pluck whatever invisible horror had seized the pirate craft. But there was no explosion as the licking disintegrating rays touched a mark.

The door to the control cabin opened and Disappearing Sam's grinning face appeared.

"How do you feel now?"

"Are we safe?" inquired the detective.

"Take a look in the visiplat," suggested Sam, pointing to the instrument.

The visiplat for the rear of the craft showed a fire spewing pirate craft firing disintegrators at them.

"They'll blast us!" screamed the detective, paling in fright.

"They've been doing that for two hours," grinned Sam, "and so far we're in pretty good shape."

The detective noted then that not only the fore guns but those on all sides of the pirate craft were blasting. An explanation dawned on him.

"You've made us invisible!"

"Smarty! Someone told you!"

"But how? How can you make a whole ship invisible?"

"Well, slewfoot, I suppose you've noticed that I wasn't apt to disappear as long as I was in a closed room or handcuffed to a person.

"I hate to give away my secret of invisibility, but since you aren't apt to duplicate it, I'll give you a hint. Light consists of small particles of matter called photons which are affected by gravity just as much as large particles of matter, but which don't appear to be affected because of their high speed.

"Now if any light giving object were heavy enough it would be invisible because the gravitational field would prevent the light-rays from leaving the object. I've a small gravity machine in my arm—it's a variation of the prin-

ciple used in creating gravity inside a spaceship. This machine is geared up to the point that it holds all photons and prevents any reflected light from leaving me. I just increase my own gravity field and become invisible.

"But there are two disadvantages to this. The first is that I'm likely to make everything else fly toward me and the second is that I'm likely to make everything invisible near me. I overcame these two disadvantages with a special repulsion field that just neutralized my gravitational field so that objects that weren't moving at the speed of light wouldn't be attracted. Light and high speed forms of energy only pierce this field.

"I couldn't touch anything except with the soles of my feet, which were enclosed in the repulsion field, without making it invisible along with myself. And I couldn't perform my stunt in a closed room because there wasn't any way to get out without touching something with my hands and making that object invisible."

"But how did you make the entire ship invisible?" asked Hatney.

"I simply shut off my repulsion field. As a result, while we're invisible to the pirate ship, we've captured the craft with our gravity and it's circling us like a satellite, firing at us and unable to hit us because it's going around so rapidly."

"Going around so rapidly?"

"Yes, the force from those charges of the disintegrators is thrown into a parabola by the motion of the ship. Our position is so located that these charges sweep past us. The only way to hit us would be to change the aim of the fore guns, and that would mean to maneuver the ship. They can't maneuver it as long as our gravity holds out."

"But why isn't everything flying toward you inside this craft?"

SAM pointed to his arm. It was an artificial arm so mechanically perfect that it was almost indistinguishable from a real arm. Sam had connected the arm with the structure of the ship.

"The gravitational attraction now belongs to the entire ship, not only to me," he explained. "Each object on the ship has the same specific gravity in relation to every other object as it had before. Therefore, there isn't any more attraction between objects than before."

"Holy mackerel!" gasped Py.

A few hours later a private ship came to a reluctant landing at the police spaceport outside Washington, D. C. Observers had seen it spin into the stratosphere and then make a gallant but unsuccessful effort to fly out again before approaching so close to Earth that either had to land or to crash.

The instant the pirate craft had landed, interplanetary police had covered the machine with disintegrators and a crew of surly, dejected pirates filed out with their hands in the air.

Then, nearly frightening the police to death, a small two-passenger rocket materialized out of thin air and humped to a rough landing on the field.

From the interior of the craft swaggered Detective Py Hatney.

"Lock 'em up, boys," ordered the detective. "The Venusian ruby is in their craft. They tried to steal it."

"How did you—" began one of the officials of the police.

"Never mind now," began the detective. "I've also got—"

The detective stopped. Suddenly he ducked back into the two-passenger rocket through the open door. An instant later he reappeared empty handed.

"For a minute I thought I had Disappearing Sam," said Py Hatney with dejection. "But that low down, cussed Mercutian insect has disappeared again and he had the nerve to leave a note thanking me 'for the buggy ride.'"



Conducted by DONALD DALE

This department is running a series of excursions to all the remarkable places you read about in science fiction. In a sense, they are expeditions; for notes are made of the probability of the wonders we encounter—and any member is entitled to question them. If you've missed the first three trips, you're still not too late to join us. We will travel near and far, in time and space; and before we are done we shall take an even stranger journey that will bring us face to face with ourselves! Right now, on a course set for us by the two-headed colossuses we last visited, we are on our way to an unknown destination in megagalactic space.

Between Universes

BEHIND us, framed by the space-ship's rear port, the Milky Way. An equal distance ahead, another island universe that is its counterpart, visible through the front port as a flat disc within a tenuous globe.

Gradually, with our increasing speed, both disc and globe resolve into millions of corrugating suns. One near the edge of the dense plane and which seems to be a binary, lies directly on our course. Approaching closer, we see it is actually a three-member system—but of a strange sort.

A great gaseous sun and two dark bodies of nearly its own size—all revolving about a common center! In a sense it is a solar system, but the two cold bodies are not planets but stars.

The development of such a system is different from that of ours; from what we know of the origin of life, it could not arise here. Accordingly, we set about changing our course—when suddenly an inexplicable thing happens.

A brilliant aurora, like our terrestrial Northern Lights, springs out around one of the dark stars—and as abruptly disappears! The phenomenon is repeated, once, twice, and then the other dark star glows momentarily!

Fascinated, we watch as the alternate auroral lighting continues irregularly. Something deliberate there seems in that aerie pulsating—almost *purposeful*. As if a different order of reality obtained in this differently constituted twin universe to our own, and the very stars

pulsed with sentient life.

Rager now to continue on, we head for the night side of the slightly smaller of the two stars. The strange glowing has ceased before we roll to a stop on a smooth black plain. As far as the eye can see it extends, an unbroken surface as flat as the top of a table. Our feet, as we step out on it, beat out a metallic ring.

Suddenly there is a movement in front of us. Something is rising up darker than the night and black as the heaving plain! It takes shape—grotesquely human—and yet it still seems one with the metal ground in which it is rooted. As if the very plain had twisted itself up into that form.

"Who are you? What are you?" we cry—but there is no answer from the great shape of metal. Yet it seems to hear us, inclining its head in an attentive attitude, and it seems to listen as we discuss what to do.

Then it speaks.

Speaks? Yes, so far as uttering words is concerned, but the thing seems incapable of putting them together into coherent expressions of thoughts. It is merely repeating words we have just exchanged among ourselves—imitating them aimlessly, it seems, to the accompaniment of a restless movement of its arm-like members. Soon, however, we realize that there is purpose to its actions! For as it repeats words it is pointing to various objects in the desire for us to indicate which are represented by particular sound symbols.

We realize now that we are in the presence of a brilliant intelligence. A strange colloquy ensues, though we are still wary of approaching closer, as the metallic creature methodically sets about learning our language, the arbitrary meanings we impose upon sounds. Soon it has learned enough to be able to ask us questions about ourselves, its voice carrying flatly to us across the intervening darkness, with a peculiar lack of overtones.

We explain our peaceful purpose, and at length the creature seems satisfied, the questions cease. A thousand questions of our own struggle for priority, but before we can utter the first, all are driven from our thoughts when suddenly alongside the creature there shoots into view an amazing object—one that has the form of half of a man.

Two legs it has, above them a truncated torso to which are joined arms that reach to the ground—but no head! It is metal all over except for a circular window, in the front of the torso, of one-way glass, opaque from our side, behind which we can make out only a dark formless shape.

As we stare bewilderedly at the weird figure, the metallic creature we first saw begins

to speak again, making explanations at last—and they are more remarkable than anything we imagined. Itself, it is merely a machine for communication between the inhabitants and strangers, such as ourselves, to this world!

The metal plain upon which we stand is the landing roof of a vast underground airport, through which it had been raised upon our appearance, shaped into our own likeness so as not to frighten us. As for the "half-man" beside it, that was the normal vehicle of the inhabitants, and the Airport Commander, who was directing this voice, was inside, the shadowy blur behind the small window!

Eagerly we ask what he is like but he replies, through the "Voice Machine," only that his is a form of life entirely different from ours. Later he will show himself and explain, but now he must hurry to a meeting of the Stellar Congress, of which he is a member. A special session has been called to ratify terms of a treaty just arranged with the Dictator of the twin star of this world. Then it is that we learn that the pulsing glows we saw from out in space were artificially produced auroras used in inter-stellar communications!

War had been impending between the two worlds and we had arrived just as word had been flashed from the Dictator that he would accept their concessions and agree to maintain peace. And then we learn what the word of a Dictator, here or on Earth, may be worth.

A sudden drone of ships driving in from space! *Enemy bombers.*

In a flash the Airport Commander in his man-like shell has dived through an opening down into the arsenal, while by means of the Voice Machine he tells us he must radio a warning to the capitol, then try to spot the Dictator's fleet with a searchlight and pick off as many ships as possible. In a moment he is back, carrying a light no bigger than a pocket flash.

We think he has lost his sense in the excitement. But on instant later, from that tiny light, a beam goes shooting up into the stratosphere!

The strong beam sweeps through the sky, as the Commander turns the light in his hand, and suddenly a hurtling black shape is caught in its glow. Instantly, while the rest of the fleet drones on toward its objective, the ship turns and on a long slant *dives directly at us.*

To our relief we see that, unnoticed by us, other soldiers in their metal "bodies" have brought up an anti-aircraft gun. But our confidence is badly shaken when the Commander, hardly pausing to take aim, fires in the general direction of the approaching ship. The shell, however, is well aimed; it seems to be of the "tracer" variety and as we follow the streak of light that marks its flight, we see that it must strike its target.

But suddenly the ship, now inside the atmosphere and driving at terminal velocity, swerves sharply—away from the shell's trajectory! At the same instant a gun barrel thrusts out the ship's nose, and as we stand transfixed by that finger of death pointing straight at us, with the rising scream of torn air filling our ears, we know we are doomed.

And then the shell *turns!*

Turns, as if possessed of independent intelligence, when almost abreast of the ship—turns

to match the ship's manoeuvre! And a split-second later it strikes, with a terrific explosion that rips the ship into a thou—

"Oh! stop! This has gotten out of all bounds," exclaim several members of our party. They feel we are way beyond probability. Let us see . . .

Terrestrial auroras, it has been discovered, result from emission of light by electrically excited atoms. Laboratory tests with discharge tubes containing air at low pressure show that radio waves of gyro-frequency, the gyration frequency of an electron in the earth's magnetic field, would produce a strong glow in the ionosphere. The artificial display would be the same in principle as a natural aurora—or the glow in a neon light! *And installations of existing radio stations are powerful enough to produce such artificial, controllable auroras.*

The "Voice Machine"? It already exists! Invented by Bell Telephone engineers, the Voder, as it is called, can be seen at either the New York or San Francisco Fairs right now. All of its essential parts, except ten keys, are in regular telephone use. Pressing the keys in various combinations produces current patterns like those which would be created if analogous sounds were actually spoken into a transmitter. These electron streams, amplified enough to excite a loudspeaker, reproduces the twenty-three sounds into which all human speech can be analyzed—and many more besides!

Likewise is our tiny but incredibly powerful "flashlight" a reality. It is merely mercury vapor under pressure, electrically activated. One recently produced is contained in a glass tube, specially designed to withstand a pressure of 200,000 lbs. per sq. in., only three inches long and a twelfth of an inch in diameter! At a distance of a mile, you can read by its light.

A "bullet with eyes" also exist! A magnesium cartridge in its nose burns with a brilliant light that streams out of radial openings during flight. Reflections from its target back to a photoelectric cell actuate its detonator—and, by a different arrangement analogous in principle, a larger shell, with additional mechanisms, could be automatically redirected to a shifting target!

As for the unusual sun-systems we are visiting, astronomers know of binaries with a double component, they know of cool stars and stars with carbon in their spectra—capable, under the right conditions, of bringing forth life! But we have said that a binary might not present the right conditions? Perhaps not—for a form of life, like ours, based on carbon. But we do not know yet what the beings of this world are like—and other forms are possible!

Let us return, then, and continue this excursion until we have seen more of this enigmatic world. And perhaps something which exists only in fiction . . .

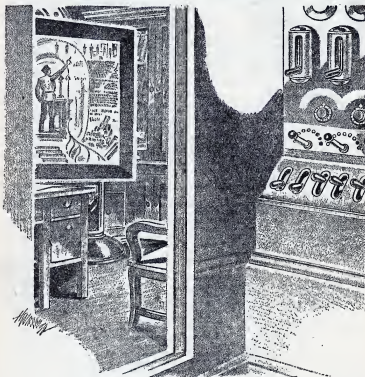
After the destruction of the enemy bomber, the Commander hurries us into a plane and we take off for the capitol. Another Voice Machine accompanies us, this one unpretentious in a small box, since the human illusion is no longer necessary to protect our feelings. But there is little time for conversation before an accident overtakes us. Evidently damaged in the take-off, the plane's landing gear rips free with a grinding of metal! (turn to page 99)

HOUR OF JUDGMENT

by R. DEWITT MILLER

Author of "Master Shall Not Die," etc.

Every conceivable scientific analysis had been applied in hope of discovering the origin of the radio-active rose-hued mist. But in the end it was always the same—they knew only that it had come to the other four would-be world-rulers, and that now it presaged death for the latest madman who would plunge the world into war!



Then Rod laughed and pulled down the main switch—while the madman

THE sheet of paper around which danced a glowing rose mist slipped from the trembling hands of the Great One. His face was lead gray, like that of a dead man. Blubbering incoherent sounds came from his thin ruthless lips.

Yet he still dominated Europe. He was still about to attack the last nation

on the continent which dared oppose him. Nothing changed since the moment before. No revolution or attack threatened his power. He had only been handed a note.

In the next room were five trusted guards, their n-ray guns in their hands. Beyond them innumerable sleepless mechanical eyes watched for the slight-

WILL THE TASK OF STOPPING THE DICTATORS AT LAST FALL TO

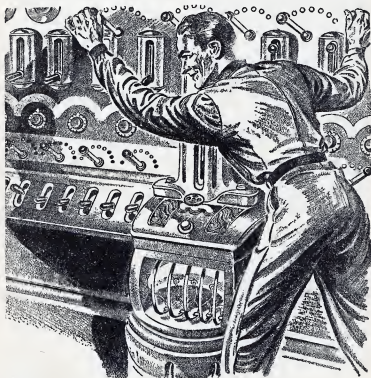
est sign of anyone who could not speak the day's password into the control microphone.

Outside was a regiment of picked troops. They were mobilized for immediate action. Giant tanks, radio controlled bombers, stratosphere rocket planes, all ready to protect the Great One from any type of attack.

In the giant barracks at the outskirts

a plain envelope, lined with heavy paper.

But when the note had been removed from the envelope, it had become a thing of ecstatic beauty. From every part of the paper had come a strange dancing light, an indescribable shade of rose that seemed to float upon and around that standard bit of paper, a glow made up of innumerable wisplike



of Europe incited his last audience to war and violence

of the city was an army superior to that of any other army in the world. It stood ready to do the Great One's bidding.

But the Great One was a broken shaking man—because of a note.

The note was written on ordinary paper, such as was produced in millions of reams every year. It had come in

streaks of spark.

It was a color from Fairyland, as fragile as cobwebs, yet as individual as a fingerprint. It was a color, or more exactly, a mist, that once seen could never be forgotten. The haunting shade, and the phantom haze of the dancing sparks, gave a sensation as original as consciousness.

SCIENCE? A THRILLING, HEARTENING BIG S-F NOVELETTE!

On the paper a few lines were printed with an ordinary everlasting photo pencil, a type of writing implement as universal as lead pencils had once been.

You are endangering the peace of the world. Give up your power. Disband your army. If you continue your efforts to plunge the world into war, you will die exactly at 12 noon tomorrow.

FOUR times before during the last forty years a man had received such a note. One had been a ruthless tyrant who had threatened to plunge Asia into war. One had been a raving demagogue who had suppressed freedom in half of Europe, and was about to turn his armed might against the democracies of the world. One had been a fanatic who had stirred up a religious war in Asia Minor. The fourth had ruled South America with blood and iron, and threatened to carry his conquests northward.

The first had laughed at the note—and slumped quietly in death at the exact moment predicted on the glowing paper. The second had shrugged, doubled his guards—and died as he stepped forward to address half a million people. The third had surrounded himself with such a bristling array of human and mechanical guards as the world had never seen—and at the appointed hour had jerked spasmodically, and pitched forward with the sentence he was speaking half finished. The fourth had laughed cynically when he received the note—and then crept out of the back door of his palace in disguise to spend the rest of his life in seclusion.

In each case the military empire of the tyrant had collapsed, and there was none brave enough or smart enough to pick up the loose ends. With the demagogue dead, people began to think again. The war hysteria died, the fires of hatred flickered and went out—and

the world stayed at peace.

The last of the tyrants had slunk from his guarded audience hall in 2010. For twenty years since then the world had been free and at peace. The specter of those little notes had done what no army or treaty had ever been able to do.

Tyranny had been killed by its own weapon—fear. Not only was there the personal fear of death which clutched at each tyrant's heart, but there was the even more terrible fear of the unknown, mysterious power which could kill unseen, without guns, or rays, or the paraphernalia of war—whose only weapon was a sheet of ordinary paper which glowed with rose-hued loveliness.

There had been no wound on the men whose lips had been silenced at the appointed hour. No medical examination had ever found anything wrong within their bodies. They had simply died—nor could any method known to science restore any flicker of life.

The secret services of a hundred nations had scoured every corner of the planet for the force which wrought such miracles. A hundred thousand suspects had been questioned. Each note had been mailed in a different place. There was not the slightest clue or means of identification.

Every conceivable type of analysis had been used in the hope of discovering the origin of the rose mist. Except for the fact that the glow was radioactive, nothing had been discovered. The paper was ordinary. It had not been treated with any chemical. The insulating lining of the envelopes gave no information. It was ordinary heavy paper, that for some mysterious reason prevented the glow from showing through the envelope.

Nor could the rose light be duplicated by any known method. A million men would have given their souls to have found the secret. But it had defied every effort of science.

No notes glowed with the lovely rose

mist except those from whose decisions there was no appeal—and no escape.

So for two decades after the fourth note the unscrupulous of the earth played their little games and practiced their little tyrannies, but they did not seek great power, or attempt to plunge into war. For only the threat of imminent, universal war had ever brought forth one of those bits of paper with the rose loveliness of death.

DURING the decades of peace science had advanced. New streamlined cities rose traffic lane on traffic lane where smoke, ugliness and inefficiency had ruled half a century before. The average human lifetime began to stretch by leaps and bounds as the men behind the microscopes closed in on the last strongholds of disease. Giant stratosphere rockets crossed a continent in two hours. Private giro-rockets became as common as automobiles a century before.

Finally the story of the last of the notes faded almost into legend. Meanwhile the common people of Europe, lulled by the years of peace and freedom, had allowed one liberty after another to slip away from them. Exploitation had led to poverty. Poverty had produced vast numbers of desperate men ready to follow any leader.

Then there had arisen a man who had proclaimed himself ruler of the continent. He had called himself the *Great One*, and had secretly organized an army. With one swift, almost bloodless attack after another, he had forced most of the continent to bow before his will. Each time, with soft words and unfulfilled promises, he had avoided a general war.

At last the democracies could no longer tolerate such an influence. Diplomatic clash followed diplomatic clash. But the Great One, drunk with his power, defied the world. Then came the inevitable time when open conflict

could no longer be avoided.

The Great One, massing his armies, prepared to crush the last spark of freedom on the European continent. He summoned his generals and puppet statesmen and issued his orders. Then he arranged to address his followers at a great mass meeting at noon the next day.

Finally, he turned at the urgent call of his trembling adjutant, and was handed a note, a piece of plain paper that glowed with a breath-taking beauty.

For a long time there was silence in the room. The little group shrank away from the note, as if to touch it meant death. At last the Great One brought his voice under control:

"Where did it come from?"

"We do not know. It is postmarked in America."

"Then we shall destroy America."

"You do not destroy a nation in a moment," one of the generals said slowly. "Besides, what difference does it make where it was mailed. The power who wrote that cannot be destroyed with bombs."

"Fool, coward!" the Great One screamed. "That is nothing but a note, a piece of paper to scare children, a bluff."

The general who had spoken looked away.

"You know the story," he said.

"It is not true. It is an old woman's story. It was nothing but coincidence. And if it were anything, it has gone now. No such thing has occurred for twenty years. This is only a hoax by our enemies."

"Perhaps," the general murmured. "But it has the strange glow . . ."

The Great One swung on the adjutant.

"Keep all knowledge of this from the people."

The adjutant cringed.

"It is too late," he whispered. "It is

already known. One of the foreign correspondents, who is old and remembered that last note, was watching for this one. He had bribed a man in the postal service. When any suspicious letter came, he examined it with ultra violet light. Our secret police only just now found out the facts."

"Where is the foreign correspondent?"

"Dead—an unfortunate accident."

"Well then?"

"We were too late. He had already sent out the message by short wave radio. The great telenews stations throughout the world will soon begin to broadcast the story."

"Have our own stations broadcast stories saying it is a lie, that we have caught the traitor who sent the note. Say that we have discovered the secret of the rose glow. Get some member of the opposition, and torture him until he confesses."

"Yes—but . . ."

"The orders have been given."

THE Great One turned back to the group. None of them had moved. They stood staring at the thing on the floor, unable to take their eyes off the bit of glowing paper.

"Have you no strength," the Great One demanded, "no faith in our power?"

For the first time in years a remark of the Great One was ignored. At last one of the men said fearfully, more like a scared child than an iron general:

"What do we do now?"

"Do! We go on with our conquest."

A cunning smile crossed the Great One's face. "I have already formed a plan. If I do not speak to the people tomorrow, they will lose their spirit. Therefore, I will speak to them."

"Have the engineering corps build a double cell of projectile proof glass on the balcony where I am to speak. Have them create an insulating zone between

the two glass walls which will protect me from any known ray. Allow nothing to enter the cell except the cable for the microphone. Have oxygen supplied from a tank within the inner cell.

"After I have entered, have the glass fused shut so that there is not the slightest opening. Allow no man to come within a hundred yards of the cell while I am inside. Have every man within a quarter of a mile searched for concealed weapons."

"Have the secret police find all known members of the opposition and see that they are either placed in prison or killed. Assemble mobile artillery and anti-aircraft guns in the parade ground overlooking this building."

"Put enough planes and stratosphere rocket ships in the air to make sure nothing crosses our borders by air. Then take all available men and throw a solid cordon around the city."

The old General looked steadily at the Great One. Then he said slowly:

"I have always been a soldier. Twenty-five years ago, as a young lieutenant, I heard another man make similar plans—because of a slip of paper. I was standing near him when he died. No man's hand touched him. There was no ray, no gas, no bullet, not even any sound. As I said, I am a soldier. I can fight men—but not . . ." For a moment he paused, then added: "For your own good, I would suggest that you give up your plans of conquest and make a compromise that will insure peace."

In the silence the hoarse breathing of the Great One sounded very loud. His fingernails dug deep into the flesh of his palms. His face looked as if blood had never flown in it. His lips formed words, but no sound came from them.

On the floor the note glowed softly, the scintillating haze of the pale rose light seeming to whirl and dance on its surface. It was a thing of sheer loveli-

ness, as if beautiful, peaceful thoughts had suddenly become visible.

BUT the Great One did not look at the note. Gradually he assumed the absurd grandiose posture of those marble statues of himself with which he decorated his audience halls. In fact, he might have been mistaken for such a statue, if his face had not gleamed with sweat. His words seemed to have been forced, one by one, through his lips.

"General, you are relieved of your command and placed under arrest. The plans I have given will be carried out. I speak tomorrow at noon."

And in his apartment high above Chicago's third traffic level Dr. Rod Neilson shrugged his powerful young shoulders as he too stared at a note—a note which did not glow.

He turned it musingly in his strong slim hands, while he considered all the possibilities.

He had found the note when he had returned from reading a dissertation before the International Academy of Radiologists, then meeting in New York. The transportation mark showed that the note had been delivered half an hour before. They'd probably called his private giro-rocket about it, but he'd turned off his set to have a little peace.

The note contained only one typed paragraph.

Dr. Roderick Neilson:

Will you kindly meet me in my offices at the Edwards Radiology Institute at ten o'clock tonight? It is a matter of the greatest importance. I must insist that you come alone. A televue conversation will not do. It is imperative that you keep this appointment for the good of science and humanity.

Earnestly yours,

Dr. McGuire

To Rod the whole thing didn't make sense. There was something phony about it, a suggestion of unreal, romantic fiction, a wild-haired adventure story, complete with a mysterious summons in the middle of the night.

What made the matter especially peculiar was that Rod didn't know "Old Doc" McGuire very well—only in the general way everybody knew him. He was the type of man who would be known by everybody in his field, the type who never did anything important, and just muddled along—but who had a fine fund of stories. In fact, he was exactly the type who would get the nickname of "Old Doc."

Rod called through his memory for additional information. He remembered that the Edwards Radiology Institute was quite small, and had produced no significant research. The Institute had some fairly large tubes, and specialized in the routine treatment of certain diseases. It probably did quite a bit of good—in a small way.

All in all, there wasn't the slightest personal connection between Rod and Old Doc, not the slightest reason for his appealing to him when he got into a jam, or had some crackpot idea. There was something fishy about the whole business, but Rod couldn't think of what it could be.

Anyway, that didn't prove why he should give up a good night's sleep and rush off to the Edwards Radiology Institute. He glanced at his watch. The Institute was down by Terre Haute. There was just time to make it by giro.

The whole thing didn't please him. He'd have to get his ship out of the garage in the roof, and have it fueled. He'd have to forego a quiet smoke and a Scotch and soda. Oh, hell! He'd try to televue—whether Old Doc liked it or not.

HE snapped on the set, smiled when he got a good-looking operator on

the screen, and gave her the number.

The connection was a long time coming through. Rod began to lose patience. He wasn't used to being annoyed with such things as this. Peremptory notes from people he knew only slightly weren't the way he was usually approached.

For at thirty-five Dr. Roderick Neilson was a very brilliantly rising star in the constellation of radiologists—and he knew it. A long list of important discoveries were associated with his name. His fine mind and driving personality had often made the gray beards of the radiology laboratories splutter and fume—and finally admit that Rod had been right. But by then he was off on the trail of new discoveries, driven both by love of science and personal ambition.

The pretty operator's face showed again on the screen.

"Sorry, but we can't make connections. The line must be out of order."

"Forget it—how about a date to-night?"

"Sorry, but we can't make connections."

The screen went blank. Rod shut off the set, and mixed a Scotch and soda.

Well, Old Doc could fume by himself. He'd probably disconnected the televue set, figuring that Rod would try to call him. Was the old boy nuts? It certainly looked like the gears weren't meshing quite right. Oh, well. Rod took a long drink.

But the note wouldn't be forced out of his mind. It made him feel uncomfortable. It was just one of those things you couldn't ignore.

Rod fidgeted around for ten minutes, finally gave up, and slipped on his flying helmet. There wasn't any use. His conscience wouldn't give him any peace if he didn't go.

On the roof of the apartment he rolled his ship out of its cubby hole,

and climbed in. He closed the door, turned the artificial atmosphere valve, and reached for the starting control.

Three quarters of an hour later he swung off the Terre Haute beam and dropped to a thousand feet. He spotted a giro-garage whose brilliant advertising sign proclaimed low rates, roomy stalls, and patented landing shock absorbers.

The garage attendant told him that the Institute was only a short distance, so he decided to walk. As he started down the gleaming span of the traffic level, his mind reverted to the note. He turned the matter round and round, but it still wouldn't make any sort of sense.

Taking the elevator from the traffic level to the ground, he paused before the main entrance of the Institute. He wondered if there was an electric robot at the door. Most buildings had them now.

But instead of the door sliding back without the presence of a human being, it was opened by Old Doc himself. Even in the matter of opening a door there was that hint of strangeness and unreality about this whole business.

"Good evening," Old Doc said pleasantly, "I'm glad you came."

HE motioned Rod into the reception room and closed the door.

"I thought I'd let you in myself," he went on. "There was no need for the door robot to make a record, so I turned off the light beam."

"What the hell is this all about?" Rod snapped.

The sharp tone had no effect on Old Doc. He stood smiling in the center of the room, the clouds of smoke from his pipe defying the air conditioning apparatus.

He was a man whose age might be almost anything. His hair was gray-streaked and scraggly. His clothes appeared not to have been pressed since

he had bought them. Beneath heavy brows his eyes were light blue and mild. They seemed to be naturally smiling—but in their depths Rod thought he could distinguish a wild, almost fanatical light.

"I'll explain things as quickly as possible," Old Doc said. "But first I think we'd better go to my private office. Things will be more comfortable there."

"All right. But whatever this thing is, let's get on with it."

When they entered Old Doc's office the telenews set was on, and the announcer was speaking steadily. Before Rod could make out what news was being given, Old Doc went quickly to the set and turned it off.

The office was plain to the extent of being almost severe. They sat on either side of a desk that was covered with a layer of pipe ashes which made it look as if a miniature volcano had just erupted.

"I realize of course," Old Doc began, "that my calling you like this must have seemed rather peculiar. It must also have greatly inconvenienced you. I would have preferred to handle the matter in a less dramatic fashion. Circumstances, however, forced my hand. The issues involved were so tremendous that I had no alternative."

"Quit apologizing," Rod broke in. "It did seem a queer way to do things, but we'll let that pass. All I want to know is what this is all about. You sound as if civilization hinged on this business."

"I rather think it does."

Again that unnatural exaggeration of the possible importance of this meeting! It gave Rod a queer feeling. He tried to shake it off. He wanted to get the matter over with and go home for at least a few hours sleep.

"Stop the high sounding talk, and get down to facts," he demanded.

Old Doc leaned back and blew smoke

at the ceiling.

"Very well. I'll try to cut a rather long story as short as possible. I'm afraid that it won't seem to make sense at first, but I can assure you that when I get to the end you will see the necessity of all that I am about to tell you."

"Well, start."

"It began close to half a century ago. At that time I was a newspaper photographer. Photography was still pretty primitive then, but there was a lot of experimenting going on in the hope of devising very fast film. Of course, all that was solved later, but at that time it was a great problem.

"I HAD studied chemistry extensively when I had been doing graduate work in science, so I became interested in experimenting with new film emulsions. I fitted up a small laboratory and began trying out various combinations.

"My work never came to anything. I evolved several rather high speed films, but they were all too grainy for any practical use. But there was one emulsion that continually reacted in a peculiar manner. In this formula I had included certain artificial radioactive salts, which I hoped would give the film a sort of self-sensitivity.

"The idea didn't work commercially, but as I said, there was a peculiar feature about the emulsion. It would persistently fog under all conditions, and in a queer manner. The fog would always form a sort of pattern of wavy lines.

"I tried everything imaginable to stop that fogging. I checked my camera and film holders a hundred times. Then one day by mistake I developed a piece of the film that had never been exposed at all. It had just been in a closed holder. Even this film had those wavy lines of fog.

"When that happened, I really became interested in the thing. I made

a series of experiments and discovered the film would fog with those wavy lines whenever it was near a human being for any length of time. Moreover, the fog pattern was different for each person.

"At that time there was quite a bit of excitement about the so-called 'brain waves.' You may have heard of the matter?"

"I've heard something about it," Rod agreed. "As I recall it, the research was one of those abortive sort of things that don't lead anywhere. I think a certain group of European scientists established the fact that thought is accompanied by a series of electrical discharges. These vary with the mental activity of the subject.

"There is also a sort of ground wave, which some scientist once believed corresponded to the personality of the subject being tested—that every person in the world had a wave pattern that wasn't duplicated, like a finger print.

"I think there was some other work done on the matter—a long time ago—something about the electrical discharges being really only crude indications of deeper waves, similar to ultra short wave radio. That part's a bit hazy in my mind."

Suddenly Rod realized that he was being drawn into the web of an apparently meaningless story.

"What the hell does it matter, anyway?" he asked aloud.

"We're getting to that." Old Doc methodically filled his pipe. "What you said about the brain waves was right in general. But to return to the story . . . The scientists were just getting close to the heart of the research, when one of the European wars so common in that period broke out.

"When they finally got the war finished, all the laboratories had been blown to bits. The scientists were mostly dead—their researches hadn't told them how to get out of the way of shells.

"Anyway, the brain wave idea was never followed up. People were too busy trying to get the war mess straightened out. So they just recorded the facts, and let it go at that.

"I'd come across the data when I was doing some work as a foreign correspondent and photographer for an American paper. That work wasn't as specialized as it is now. You had to know a bit about everything.

"**I**N looking around for an explanation for the mysterious fogging of my film, I got a wild idea that it might have something to do with this brain wave business. So I began a new set of experiments.

"I won't bore you with the details, but in the end I discovered that the film was actually being fogged by the radio-electric discharges from the human brain. What's more important, I devised a sort of radio-lens which worked just as glass or quartz lens does for light rays.

"In other words, instead of taking wave pictures of everyone who happened to be near the film, I could select a person and photograph his particular wave. It was managed more or less the same way as you focus on a given radio station with a loop aerial. Of course, it wasn't as precise as an optical lens, but when you were close to a person, it worked pretty well.

"When I got that far, I suddenly had a practical idea. I rigged up a sort of brain wave camera. It was small and I could attach it to my regular camera. There was a lot of complicated gadgets that photographers had on their cameras then, so my brain wave photography apparatus passed as some sort of a range-finder.

"Every time I shot a picture of some famous person—a king, or a dictator, or a diplomat, I also took a brain wave picture. My idea was to get wave pictures of all the famous people I could,

and then write an article about it. I kept the whole thing dark, because I was afraid of being scooped. It was all just a practical money-making scheme then."

Old Doc paused and looked down at the ash-strewn desk. After a moment he added:

"That all seems terribly long ago—as if it happened to some one else."

"What did you eventually do with all these wave negatives?" Rod asked. "The strangely subtle spell of the story had overpowered his irritation, and he was anxious to hear the rest of it.

"I'm getting to that," Old Doc went on. "After a few years, I had a file bulging with them, and I was about ready to write my article. Then I met Stanley Edwards—so, you've heard of him?"

"I'd be a damned poor radiologist if I hadn't. After all, the n-ray he invented changed the whole science of radiation—besides destroying a good many millions lives. It's too bad he allowed it to be used for military purposes."

"I met him a long time after he invented the ray," Old Doc said slowly. "He was an old man, and he was haunted by the thought of those millions of men his ray had killed. He was spending all his time trying to figure out some way to insure world peace.

"Of course, that made him good news copy. After several interviews, we became quite intimate. One night we got into a discussion about brain waves. As Edwards was probably the greatest authority of his time on radiation I was particularly anxious to have his opinion on my wave negatives.

"It all led to my showing him the negatives and asking his opinion about my article. But he didn't seem interested. He just sat and looked at nothing. He must have sat that way for half an hour. I thought maybe he'd gone crazy.

"FINALLY, he said: 'Get your things together. You're working for me now'. And he named a salary which sounded like a payment on the national debt. Of course, money didn't matter to him any more. His n-ray had made him one of the richest men in the world.

"We went to his private laboratory and he set me to work making large quantities of my film. Every day he'd take the film I'd make and disappear into the laboratory. In the meantime he had me read the most advanced books on radiology.

"Then one day he came out of the laboratory with two pieces of film, both dripping with hypo. There was a queer look in his eyes when he showed them to me. He looked like a man who'd given up hope of finding a hidden treasure, and suddenly had it in his hands.

"He explained that one of the films was the radiation from a human brain, while the other showed a wave which he had created artificially. The two waves were identical.

"After that I didn't see him for almost a year. He made me promise not to tell about our work, and to keep reading about radiology. My salary kept up, and I was free to do whatever I wanted.

"From news reports I knew that he was supervising the building of this institute for the study of radio and radiation therapy. It was just one of the hundreds of things he was doing to try to pay back the world for the five million lives he thought he'd taken.

"Then one day I heard from him. He told me to come at once to the Institute. He met me in this room. I remember that he was sitting in the same chair that you are now."

Rod started suddenly out of his concentration on the intriguing story. In the depths of his mind a queer feeling was growing that behind this quiet conversation great and terrible forces were

gathering.

"I remember too," Old Doc went on, "how I could hear the radio set in the other room broadcasting the speech of the fellow the press called the 'Tyrant of Asia.' Perhaps you remember him?"

"I read about him when I studied history. Didn't he try to stir up a war?"

"Yes, that was what his speech was about. He'd sent some sort of ultimatum, and was about ready to make an attack.

"Well, when I came into this room, Edwards was looking at a water glass on the table. He didn't even speak to me, just pointed to the glass. Then he whistled a certain note and the glass broke.

"That was the second time I thought he was crazy. I couldn't figure out why he sent for me to show me a simple parlor trick that I'd done myself. Whistle the vibration of the glass, and it'll break—you understand that, don't you?"

Rod nodded. But his mind was not concerned with breaking glasses. Somehow he had become a part of that long ago scene which had been enacted in this room.

"When he'd done that," Old Doc picked up his story, "he got up and touched this panel."

Old Doc's fingers slid along the edge of one of the room's mayonite panels—and the panel swung silently open. Old Doc stepped into the room beyond and motioned Rod to follow.

So completely had the spell of the story enveloped Rod that he could no longer be startled by anything. He was not part of a wild adventure yarn which Old Doc, for reasons of his own, was telling.

IT was not until he had entered the room beyond the panel that reality hammered its way into his brain. This was the staid little Edwards Radiology

Institute, where no stretch of the imagination could reconcile the existence of a secret room. This couldn't be actually happening.

And yet there was Old Doc standing in front of a long switchboard studded with dials and controls.

With an effort Rod broke away from the feeling of unreality, and began examining the panel. He knew the meaning of the most of the instruments, but the hook-up was strange and unfamiliar. In the center of the panel was a piece of mechanism he didn't understand at all.

It was just a box with two glass openings and a rheostat control, but it seemed to have no possible purpose.

Old Doc had gone to a filing cabinet that lined one wall of the narrow little room, and was opening a drawer. He took out a thin strip of photographic negative. This he inserted in one of the little glass windows in the queer looking box.

"This is the same negative that Stanley Edwards used," he said quietly. "Then he did just what I'm doing now."

Quickly Old Doc manipulated the levers, rheostats, and switches on the panel. Slowly a wavy line of light began to form across the second glass window. Gradually it changed shape and began to match the line on the negative. Almost as a potter molds in clay, so Old Doc molded the second wave until it matched the first.

Then he reached up to the main power switch, and pulled it down. The lights in the room dimmed a moment, the purr of the dynamos below then increased for an instant—that was all.

Old Doc looked for a long time. Then he said:

"You have seen all that Stanley Edwards showed me. The only difference is that when he pulled that switch the *Tyrant of Asia* died."

Silence crowded into every inch of the little room. The tiny shaded

lamps over the switches and gauges gleamed softly. The ceiling light cast the shadow of Old Doc's face on the wall.

There was nothing very startling about the shadow. It simply showed the outline of a mild, undramatic face into which a pipe had taken root.

Yet Rod could not take his eyes from the shadow. Slowly realization was taking possession of his brain—realization that the mild shadow there on the wall had for thirty years fallen on the whole of the planet earth, that this little room had been the most important spot in human history.

Slowly his lips began to form words:

"Then you—you sent those notes—you killed them—you kept the world at peace."

Old Doc nodded slowly.

"Stanley Edwards pulled the switch the first time. He died before there was need to pull it again. After that, I did it."

"I think I begin to see how it works," Rod began. "That file contains the brain negatives you collected."

"Exactly. And I've kept it up to date. Whenever anybody began to show dictatorial or war-like tendencies in some country or other, I managed to get a wave picture of him. I was usually able to take the pictures before the person was important enough to have too many guards. Later I worked out a sort of telephoto radiolens so I could take wave pictures from quite a distance. For many years it hasn't been necessary to take so many. Maybe, after all, human beings are beginning to see the futility of war—maybe, it's just fear."

"Of those notes. . . ."

THAT was what Stanley Edwards thought would happen. I didn't think it would work at first. But he had correctly analyzed the terrific psychological effect it would have. Be-

sides removing the leader, it put the fear of death and the unknown into every potential tyrant."

"I'm still a little in the dark as to how this thing operates."

"We'll go back into the other room where it's more comfortable, and I'll do my best to explain it."

Old Doc returned the negative to the file, and turned off the power.

"As you've probably guessed," he began when they were once more seated in the office and the panel had been shut, "Stanley Edwards had gotten his idea from that silly little parlor trick of breaking a glass by whistling its vibration. We know that the human brain is primarily electrical, or more exactly, radioactive. The outward sign of that activity is the so-called brain waves we discussed.

"Well, if it were possible to create the exact pattern of some person's wave, and then intensify it until it became a thousand times stronger than the actual wave, it would destroy the electrical pattern of that particular brain, and harm no others. That is precisely what that machine in the other room does.

"Of course, it was necessary to devise some positive identification for the notes, to prevent being faked by anyone who wanted to scare his political opponent. Here again you see the genius of Stanley Edwards.

"He succeeded in making the elements which compose the paper radioactive. These elements act against each other in such a way as to give an effect similar to fluorescence. The exact color can be controlled by the amount of each element made radioactive.

"The paper lining of the envelope is given a negative charge which makes it act as an insulator. Both of these things can be done with the big tubes we have here. Two small special tubes constructed by Stanley Edwards are added to the hook-up. The rest is easy."

Gradually Rod's feeling of unreality was wearing off, as if it had been some subtle drug. The attitude of the scientist asserted itself, doubts and questions rose in his mind.

"It listens well," he said dryly, "but anything as completely unbelievable needs a little concrete proof."

"We'll come to that in a minute. And incidentally, whether you know it or not, Stanley Edwards was one of the really few scientists who deserve the title of genius. Even now I don't understand all about that panel in there. I know the principle on which it works, how to keep it in order, and how to use it—but that's enough.

"Of course, this Institute was built as a blind. Edwards needed the power to operate his brain radiation machine. The Institute is well equipped, and has done a lot of good—in a small way. For obvious reasons, I haven't sought publicity. There's always the chance that somebody will become suspicious of something.

"No one besides myself knows of the existence of that secret room. The workmen who constructed it didn't know what they were building. Edwards installed the panel himself. All the men concerned are long since dead. Even if it were found, it wouldn't mean anything. I have complete plans. The machine could be reproduced any place where you could get enough power. The negatives are filed only by number. In a minute I will show you the one book which gives the names."

AN idea which had been growing in Rod's mind, suddenly exploded.

"But why, if you have kept this so secret, are you telling it to me?"

"I thought perhaps you would guess the reason."

"I believed at first that it was some sort of research you wanted me to announce at the Academy tomorrow. But unless this is all some sort of foolish

hoax, I can't see any reason for your telling it to me. If it were actually true, talking about it would be the one thing you wouldn't dare do."

Old Doc's voice was suddenly vibrant.

"Think! There could be a reason, couldn't there?"

Rod felt the impact of the idea before it reached his consciousness. His whole being cringed away from it. Dimly he saw the implications, the long tentacles that ran out and wound about every part of his life.

His hands, clamped around the arms of his chair, seemed suddenly to be holding him to sanity—if he loosened his grip only a little this mad dream would overwhelm him.

"You mean I'm—I'm . . ."

A smile that might have meant anything slid across Old Doc's face.

"Yes," he said softly, "very soon it will be your job."

"But why—I, I don't understand."

Old Doc looked away.

"I am an old man. Science has done great things in these decades of peace, but men still die. It will soon be my turn to make that most intriguing experiment. A month ago I went for a medical examination. The time turned out to be shorter than I had thought. A year, perhaps two." He looked up suddenly. His eyes held Rod's. "But the death of one obscure man must not throw the world back into war and barbarism."

Again he looked away. There was a strange soft note in his voice. It was a queer tone to use in speaking of a man whose invention had destroyed five million lives.

"Besides, I promised Stanley Edwards that it would go on. He wanted to know—so he could die in peace."

Rod's mind escaped the spell of the story long enough to question one point.

"But why should you decide on me? You don't know me well—if this power

were used for personal ends . . ."

"I know you far better than you think. I picked you out long ago. You were then the country's most brilliant young radiologist. You still are. Obviously, whoever takes my place must know as much about radiology as possible. There are many angles of the work—particularly in connection with the taking of the wave negatives—that could be improved. Then too, should this apparatus be destroyed, it would be necessary to reconstruct it.

"As to your using this power for personal ends, I am satisfied on that point. For five years I have studied your work and your personality as I have studied nothing else. At heart you are a true scientist—that is all I want to know."

"But why didn't you choose one of your own assistants here?"

"**T**HINK again! This is a small institute. We do not get the smartest men. Besides it would be dangerous for me to have too close an assistant. He might become suspicious. No, I wanted to wait until the right time came."

"What do you mean by that?"

Old Doc stood up. His shoulders were slouched. There was nothing about him that suggested a great man in world affairs.

"It is a strange job to rule a planet," he said. "It is a queer feeling to hold in your hand more power than any man ever held before. Under certain circumstances it might do peculiar things. The sensation of pulling a switch and destroying the key man of an empire five thousand miles away is one which is hard to explain."

"I think," Rod said slowly, "I understand."

"You will know tomorrow—know then whether you are able to take the fate of civilization in your hands."

"Tomorrow?—What are you driving at?"

"You of course know of the Great One?"

"I couldn't help it. He's had the top spot in the news for the last three years."

"You know then what sort of man he is, that he is the old military conqueror revived?"

"That's the way he's been pictured in the news. But I'd rather not give a personal opinion without knowing the facts."

"I do know the facts. I have studied his actions for many years. I have seen him scorn every effort to solve problems in a peaceable way. I know that he has the old lust for power. He conceives of life as a struggle, and the only virtue to be that of being able to oppress and kill. He does not wear skins or fight with a spear, but his mind is back in the prehistoric jungle.

"For that reason he has been able to arouse the beast in men, the beast which slumbers in us all, but which we must conquer if civilization is to progress and man is to take his rightful place in a universe filled with order and happiness."

He paused. When he spoke again, it was merely to make a statement:

"Therefore, if the Great One refuses the warning, and attempts tomorrow to incite the world to mass murder, he will die exactly at noon—which will be six a.m., our standard time."

Rod sprang to his feet. His mind was a tumult of great, surging ideas, his voice was hoarse:

"You mean that you've sent him a note?"

Old Doc nodded.

"I thought you'd see the point pretty soon. Yes, the Great One has received a little suggestion that men are not born to be slaughtered. Let's see how far the news has gone."

He flipped the switch of the tele-news set. The face of the announcer was tense and strained, his voice shrill with

excitement:

The Great One says that rumor about his receiving one of the Notes is absurd, that

Old Doc turned off the set.

"I see," he said quietly, "that all the world knows. So be it. That is not important. All that is important is that one man must not block the progress of civilization. Men are born and die—but civilization must go on. The Great One's negative is number 408."

"And I am to watch you do it?"

"I would prefer that you do it yourself, under my direction." He looked away. After a moment he went on:

"I want you to be fully conscious of the problems you face. You must of course give up your position, and become director of this Institute. Give some plausible excuse, such as poor health, or a desire to carry on abstract work without any distractions.

"As the years go by, your name will fade into oblivion. The world forgets very quickly. If you should make any discoveries, be sure that your name is not connected with them. In any case, you will have little time.

"For you must go about the world taking pictures, a sort of wandering amateur photographer. There will be no question of money. Stanley Edwards saw to that, and I have made arrangements to transfer it to you. Only you must not use it to bring publicity. When the fate of man's civilization hangs on your work, you can take no chances."

For the moment this weird drama had a terrible reality for Rod. He saw all that he valued, all that he had planned and dreamed, blighted—without the slightest warning, and through no fault of his own. The whole thing was alien to him. He was a scientist. It was his job to discover, not to judge.

The frightful unfairness of it crushed in on him. Next week he was to speak

again before the academy. They would give him new honors. They would crowd the hall, struggling for a chance to hear him. He had been promised a new laboratory, the finest in the world. And he was young, only just beginning.

All this must go. He must lay everything on the altar of a dead man's dream of preserving peace, and humanity's stupid inability to control its lower instincts. It was more than you could ask of any man. And yet. . . Suddenly he buried his face in his hands.

"I can't—I can't do it. You can get some one else. I would have to give up all that matters to me. It isn't fair. You can't ask me to do it."

A soft wistful expression lingered on Old Doc's face. His voice was very gentle.

"I know. I know what it means to give up a normal life, a life that should have brought much success and honor. But it is necessary."

"But how long? How long must this strange game go on?"

Old Doc's voice was tired:

"I do not know. I thought the last time that it would be the end. I have hopes that tomorrow may be the final time that switch is pulled. It has been so long since the last glowing note appeared that the world is beginning to forget, to think that whatever the strange power was which killed through any defenses, it is gone.

"If it reappears now, it will have a profound effect. Should any of the Great One's lieutenants take up the job of conquest, I have their negatives also. But I do not think that is likely. Men who rule by fear are easily destroyed by fear.

"In any case, this work must go on until humanity learns to control its own despots. It may be tomorrow, or it may be a hundred years, or a thousand. . .

"Eventually you will turn over the job to some one else. You will prepare a letter to be sent some one, in case of

your accidental death. For years I have had such a letter for you." He unlocked a drawer of his desk and brought out a small envelope. "This contains a strip of micro film on which is all the information necessary about the machine in there and the preparation and handling of the film.

"YOU will find the camera in the cabinet beside the filing case in the secret room. The book with the list of names is in the drawer under the camera, also two radioactive notes ready to be addressed. Full instructions for creating the radioactive paper are included in the micro film. I suggest you read over the film before you return tomorrow. Your knowledge in your field will help you fill in the gaps."

Rod took the envelope, but he did not look at it. His eyes held Old Doc's.

"No," he said quietly, "I can't do it. You are asking too much."

"At least you will come back tomorrow. As I said, the deadline is six a.m., our time. You should be here at a quarter of."

"I'm afraid it wouldn't do any good. I'd rather not be concerned in it at all. I am a scientist. I do not know how to choose what men should die."

"I think you will be able to recognize tyranny. It is not difficult to understand a man when he says he is about to make a war. You cannot hide an army. You will not be concerned with the minor disputes and fights which go on constantly. This weapon must only be used to halt a war which endangers civilization.

"You will find a few ideas of my own on this matter in the information I gave you."

Rod shook his head.

Suddenly he saw the heart of it, the thing he had been trying to say all along, the reason why he could not bring himself to assume this strange, uncrowned kingship of the world.

"I'm sorry," he said slowly, "but I do not feel that I should judge how the world should be run. If men wish to destroy themselves, that is their business. It is not for me to say. I am not God."

Old Doc stood up. He looked tired and rather insignificant.

"Neither am I. I do not know why men should act as they do. I did not create the universe. I will very soon have to account to the power that did. It is up to Him to say if I have done wrong. I only know that I refuse to see civilization destroyed—to stand idly by while man gives up the mastery of his planet. You will come tomorrow morning?"

There was silence for a long time. Finally Rod said:

"I will come. But I tell you now that I will have no part in this thing."

The crisp night air and the brisk walk to the giro garage had a peculiar effect on Rod's mind. A thousand doubts and questions which he had not spoken when he had been with Old Doc now clamored for a hearing. The story, which had seemed so logical when he had heard it, began to crumble under the assault of common sense.

When he was back in his own apartment, he tried to analyze the whole thing step by step. His logical, scientific mind demanded that the story be brought down to the earth of cold facts.

The more he went over it, the more it seemed that there must be some hidden significance to what Old Doc had said. It must have been only a clever blind for something. His mind simply refused to accept the experience at its face value.

THERE was something so fantastic, so utterly alien to all that his scientific training had taught him, that his instinct told him that there must be a loose end somewhere. But where?

Then he thought of the film Old Doc

had given him. He brought out his portable viewer, inserted the film, and began to read. There was much in long discourse that he could understand, much that seemed vague, and almost absurd. The theory of wave mechanics with which he was familiar was carried to a point where the abstractions became meaningless.

At last he snapped off the viewer, and sat staring at nothing.

He was no closer to an answer than he had been before. Every intuition cried that there was something else behind all this, some wild hoax, some dream of a half genius, half madman.

And suddenly everything fitted together, as when the missing clue to a puzzle is found. *Insanity*, a warp somewhere in Old Doc's brain. From the starting point, everything fitted together perfectly, all the absurdities and paradoxes vanished.

There could be no mistake. He could see too clearly the thread of madness running through the whole elaborate fabric of fancy and half truth. It was the old mania for power, the wish-fulfillment dream of a little man who longed to rule the world.

But every man who had received the fatal notes had died at the appointed hour? How? Probably some gigantic international secret society who had sworn a fanatical vow to keep the world at peace, and who had agents close to all great militarists. There were many ways by which such agents could kill without leaving a trace—some unknown ray, some subtle poison. Perhaps even some timed poisonous effect from the glowing note itself.

After all, the last man who had received a note had not died, but had run away. The note the Great One had received could easily have been sent by any of the dozen political parties who opposed him. There was no reason why some one couldn't have discovered how

the notes were made to glow with that strange color, or invent some way to fake it. What one human brain could devise, another could duplicate.

That made sense. It fitted with reality. And there was no reason why Old Doc couldn't rig up an important looking machine and go through that rigamarole of matching waves whenever one of the note deadlines was due.

So the queer warped brain would think that it had been the destroyer, that it ruled the world. And this idea of protecting man from himself, of exaggerated altruism, that too was a common sign of madness.

What more was necessary?—an audience. There was no use being the world ruler if no one knew.

It was all psychologically valid. This stressing of secrecy, this midnight meeting.

Then there was the complete lack of proof. Had Old Doc shown him the camera? Had he taken and developed a brain wave film? Had he shown him the note before it was sent, or even the glowing notes he had spoken about having in the secret room? Had he been shown how a note was made radioactive? No! He had merely been told in a bit of film.

Had there been any sort of a demonstration? On the contrary, Old Doc had stayed away from all demonstrations except the one which could prove nothing. The whole thing had been on faith.

THEN there was that funny business about the telenews set being on when he came in, and Old Doc turning it off so quickly—then afterwards implying that he didn't know whether the Great One had received a note. The letter from Old Doc had reached his apartment about half an hour before he had returned from New York. It could have been sent by special rocket. That would just allow time after the

news of the Great One's receiving the note had been announced.

It all fitted together perfectly. All doubt fled from his mind. He got up and glanced at the window.

Gray streaks of dawn were touching the eastern sky. He was due at the Institute in an hour. Well, he'd go—only this time there wouldn't be any condoning Old Doc's madness. Such a man shouldn't be allowed to head a reputable scientific organization. Some one must stop his mad game.

It was a quarter to six when he reached the Institute. In the weak light the building looked very sane and ordinary. Its trim but rather old fashioned lines rose up into the gray blue of the morning sky. Glass, aluminum and mononite gleamed cleanly.

Strangely, there was again no question from the door robot when Rod cut the beam. He stood waiting a moment, then tried the door. It was unlocked. He went in.

Several of the Institute personnel were in a little group at the end of the room. It flashed across Rod's mind that it was queer these technicians should have come to the Institute so early. He knew that the offices did not open until nine. It was strange too that no secretary greeted him, no one inquired whom he wished to see. Only the low voiced conversation among the group stopped as he entered.

After a moment Rod asked:

"Is Dr. McGuire here yet?"

There was a moment of strained silence, then one of the group inquired: "You are Dr. Neilson?"

"Yes."

"You had an appointment with Dr. McGuire?"

"Yes, yes, of course. A personal matter . . . I . . ."

"What time were you to meet him?"

Rod's patience suddenly ran out.

"Where is Dr. McGuire?" he

snapped. "Tell him I'm here. —He'll understand."

Again there was an uncomfortable silence. The group fidgeted about. Finally one of them said:

"I'm . . . I'm afraid you can't see Dr. McGuire."

"Why?"

"Dr. McGuire is . . . is dead."

For a moment Rod's mind wouldn't accept the fact. He hardly realized that he said:

"What happened . . . how?"

"Apparently it was a sudden heart attack. He was found dead in his office two hours ago. His body has just been removed."

SILENCE again. Slowly Rod was beginning to see a vague outline behind all this. But before he could ask another question the technician volunteered.

"There's one queer fact. A note found on his desk was addressed to you."

"Where is it?"

The man took a thin envelope from his pocket.

"We haven't opened it."

Rod ripped the envelope and glanced at the single line:

"Have had a heart attack—can barely write this—it's your job now . . ."

He crumpled the paper and put it in his pocket. So Old Doc had played the game out to the end. There was something gallant about that—if you could call a madman gallant.

Then the idea which had been in the back of his mind took shape.

"Are you sure that he died of heart failure?"

"Why—why, yes. He was known to have serious heart trouble."

"I just wondered. I wanted to be sure it was *natural* death."

A queer expression flicked across the technician's face.

"I see what you mean. There were some—some peculiar circumstances. If you would like an autopsy . . ."

Rod did not answer for a moment. It was probably better, he thought, to let sleeping dogs alone. There was no reason for ever knowing exactly how Dr. McGuire had died.

"No," he said slowly, "I don't think so. It was undoubtedly heart failure. By the way, is there a telenews set here?"

"There's only the one in Dr. McGuire's office. Would you like to use it?"

Rod nodded, and followed the man down the hall to the little office.

"If you want any of us, just ring," the man said as he went out. "We would appreciate it if you helped us straighten out the legal problems. The administration of the Institute was almost entirely in Dr. McGuire's hands. There's probably some plan among his papers which will explain who is to have the control after his death."

"I'll do anything I can."

After the man was gone, Rod locked the door. He wanted to be alone while his mind untangled the last threads of this thing.

Apparently Old Doc had had some premonition that his game was up, that his complex, mania-born story had not taken root in Rod's mind. Therefore he had taken the chance to slip out.

Insanity was always a way to escape reality. When Old Doc had sensed reality coming too close, he had chosen another way to side-step the unpleasant fact that he was only a very insignificant man who had built a dream world of power.

There were a dozen different poisons, or perhaps some ray. Old Doc was almost at the end of life anyway. Then again it might really have been heart failure. It didn't much matter.

It was all to the good in any case. This solved things so very easily. In

the bright daylight the whole thing looked very simple. It seemed strange that he should have fallen under the spell the night before.

He lit a cigarette and flipped on the telenews set. The scene showed the Great One in his double-walled transparent room. Then the camera retreated, showing the great cleared space, the lines of projectors, the banks of detectors.

NEXT a great sea of faces was spread before him. Murmurings came through, murmurings of uncertainty, of apprehension and fear. The Great One began to speak.

The clock on the desk ticked off the seconds. It was four minutes to six.

The Great One spoke on. Words of defiance flowed from his lips, words that stirred the emotions of men and incited them to war and violence.

For a moment the scene changed. Static snapped. Blurred phrases from the American announcer came through.

"Revolt in the capitol—the workers and farmers are marching—the opposition gathering its strength—the Great One's prestige is wavering—if he dies—if the note . . ."

Then again the cold, imperious face was on the screen.

"Only conquest glorifies man . . . tomorrow we march to fulfill our destiny."

The little clock on the desk chimed six. Rod dropped a cigarette that was burning into his fingers.

Still the Great One's words went on.

"Our squadron of stratosphere rockets is the greatest, our men are the bravest . . ."

Rod relaxed. A little laugh came from his lips. He lit another cigarette. The minutes ticked away. It was five minutes after six.

Well, he'd been right all along. This last note had just been a bluff by the Great One's opposition. Whatever

had caused those other men to die was no longer active. The real world was still normal and ordinary. Facts were facts.

Rod got up and started out of the room.

Then an idea stopped him. He never really knew whether it was some strange feeling about not betraying even a madman's trust, or whether it was just some whim, some desire to have a little thrill. He didn't even realize exactly what he planned to do until the panel slid back at his touch.

For a moment he hesitated. Then he shrugged and went into the secret room.

His eyes ran down the file. Negative 408.

He slipped it into the machine. With a smile he began to turn the dials and adjust the levers. Memories of what Old Doc had done, of what he read in the microfilm, rose in his mind.

The second wave formed. Bit by bit it began to match the negative. Finer and ever finer were the adjustments, closer and ever closer the two waves.

And then they matched. Curve for curve, angle for angle, they were identical.

Then Rod laughed, a little inward laugh—and pulled down the main switch.

The lights dimmed a moment, the generators whined louder for an instant.

Nothing else happened.

It gave Rod a queer little thrill to play the madman's game. It was a strange bit of amusement.

Then a fact hammered at his brain, hammered and hammered until it got through. It was a ridiculously simple fact. The fact that there was no sound now from the telenews set.

The Great One's voice had ceased.

the dials of the telenews set and twisted them. Then the set sprang to life.

The announcer's voice was broken, almost incoherent.

"They have broken into the glass cell—the Great One—he's, he's *dead!*"

Rod turned off the set. He stood in the center of the little room, stood motionless through long minutes as if all life had gone from him.

Outside the clear morning sunlight brightened. The trees beyond the window showed gay and green.

Then suddenly Rod spoke—as if he were talking to some one standing beside him.

"I'm sorry. I didn't know."

From far down the hall came the sound of approaching footsteps, but Rod did not hear them. In front of him the panel was still open, but he did not see it.

In his mind a voice kept speaking, a quiet voice, a voice from an insignificant looking old man: ". . . to stand idly by while man gives up the mastery of this planet . . . if you can take the fate of civilization into your hands—perhaps this is the last time, perhaps it will be a hundred years, a thousand . . ."

Some one tried the door, found it locked, and rattled it.

"Dr. Neilson . . . Dr. Neilson! What's happened?"

Fame, success, freedom, pleaded softly, offering all that the world had to give—but always they spoke against a background of broken men snarling as they fought over the ruins of everything on the planet that had ever been worthwhile.

"Dr. Neilson—open the door—somebody help me—something's happened to Neilson—we'll have to break down the door!"

Rod's hand clutched the desk on which another man's hand had writhed in the agony of death as he forced back eternity until he had scrawled a

LIKE a man gone wild, Rod ran into the other room. He clutched

note . . .

"Dr. Neilson, if you don't answer, we'll . . ."

Slowly Rod's face changed as if unseen fingers were moulding it until it became a living mask, a mask that would forever hide his thoughts, his hopes, his dreams . . .

His hands relaxed. He went to the panel and shut it. Then he unlocked the door.

"Dr. Nielson, what in the devil were you . . ."

"Finishing the job. It's mine now."

"What?"

"Nothing—of any importance . . ."

He went on down the hall, a tall lean figure, whose shadow lengthened steadily—while outside the world rocked with the news that in the hour of judgment all the might of armies had been as nothing.

THE END



Test yourself on these questions. Answers and scoring points are given on page 112. In every case tell all you can. For example, if the question were "What is an astronomic unit?" a 100% answer would be "A measure of stellar distances, equivalent to the mean distance of the Earth from the Sun, which is 92,900,000 miles." But a partial score would be allowed for *either* the definition or the approximate figure (within a range indicated in each case).

1. Identify the following symbols:

A	F	K
Btu	f	kv
c.g.s.	cm	e.m.f.
mg	c.m.	e.m.u.

2. What is a critical temperature?

3. What are anemeter, anemometer, sphygmomanometer, brontometer, sextant, annuitant?

4. Convert the following Centigrade temperatures into Fahrenheit, and Fahrenheit into Centigrade:

100° C	32° F
212° C	0° F

5. What is an inert gas?

6. Give in order the main divisions of organic matter below kingdom.

7. What is spelology?

8. Differentiate between an antigen and a serum.

9. What are streptococcus and streptocarpus?

10. Choose the form in which each of the following statements is correct:

- The speed of a boxer's punch is (4 ft. per sec.) (400 yards a minute) (40 miles an hour).
- Air consists chiefly of oxygen and nitrogen in the proportions (3 to 2) (2 to 5) (1 to 4).
- The number of stars within eleven light years of the earth is (3) (11) (1200).
- The number of atoms in a man is about (110,000,000,000) (1,000,000,000,000,000) (10,000,000,000,000,000,000,000,000,000).

(Answers to These Questions Will Be Found on Page 112)

DUST

by LLOYD ARTHUR ESHBACH

Author of "Mutineers of Space," etc.

Was the human race ready for so vast an amount of radium? Could men be trusted yet with its infinite power for good and evil? Jerry Blaine pondered that—as he hurtled Earthward with his incredible cargo!



And then from the cabinet gushed a squirming mass of hideousness

On the night of August 10th, at 9:38, astronomers on the west coast of the United States observed the sudden appearance of an amazingly brilliant meteor in the Constellation Virgo. It sped across the sky like a lance of silver radiance, until suddenly it vanished in the pallid light of the Moon. . . .

JERRY BLAINE plodded wearily across the rugged face of a dead world. The weighted legs of his

space suit stumbled over the jagged ribs of lava skeletons; he plowed and floundered through shadowed ravines, yard-deep with the accumulated cosmic dust of uncounted ages; he crawled with metal-clad fingers up precipitous walls of craters.

For thirty hours he had been struggling across the surface of the Moon. Hours of toil in a world of utter silence, of pitchy black shadows and harshly glaring light, of treacherous pitfalls and

mountainous barriers. His heart thudded audibly; sweat streaked his face and body; his muscles groaned against the torture of prolonged, superhuman effort.

Yet behind the spherical glassite helmet of his space suit, the boyish face of Jerry Blaine bore an expression of triumph that no weariness could mar. His blue eyes twinkled joyously, and his wide mouth grew even wider with frequent grins of a somehow incredulous satisfaction. For he had succeeded where success had seemed impossible! He had made a discovery that had replaced the certainty of death with a promise of life.

Wait till Morkill heard the news! He'd throw off the cloak of gloom he'd been wearing since they had landed on the Moon. He was a skillful chemist—else he couldn't have formulated the radio-active compound that had made their Lunar flight possible—but he certainly couldn't be called a little ray of sunshine!

Thirty hours behind him lay the crater Tycho with its vast radiating streaks of light which had baffled astronomers of Earth for centuries. They need be baffled no longer! For he had seen what at one time must have been tremendous chasms in the Moon's surface, like—like cracks in a dried mudball—but now the cracks were filled. From the heart of Earth's satellite milleniums ago had spouted a crystalline lava to fill every crack and crevice with an indestructible mass of radiant matter. Lava that was pure quartz, somehow impregnated with an amazing store of—radium!

He might be mistaken, of course, but it must be some radio-active substance, or how could it continue glowing as it had for ages? At any rate, he'd know when he reached *The Apollo*, for he had a fragment of the lava in the pack on his back for Morkill to test. And if it were radium, or any other radio-active material, they could return to Earth!

They had headed for the Moon with what they thought was sufficient fuel for a two-way trip—but they had miscalculated the quantity needed. His discovery might mean release from their exile.

Jerry stumbled and fell headlong into a bed of finest dust. Awkwardly he crawled erect, his muscles rebelling against the added effort. Damn such a place! If only he could jump safely—but though the weaker Lunar gravity permitted his leaping through the emptiness like some amazing jumping jack, the procedure was anything but safe. He had tried it, and had taken some falls far worse than those that came with slower progress.

If it hadn't been so important that they conserve their little remaining fuel, both he and Morkill could have made the trip in *The Apollo* in a few minutes—or he could have made the trip alone in the little emergency sphere they kept in the vacuum chamber of the space ship—but. . . . The thought ended abruptly as he saw the huge sphere before him. His heart leaped, and a shout burst from him to crash thunderously against his own ears.

He balanced himself for an instant on the tip of a ridge—and sprang mightily toward the gleaming, rivet-studded globe. Up—up he soared in a great arc that carried him across the broken ground to the level spot on which *The Apollo* rested. He landed awkwardly in a bank of cosmic dust, sinking deep into the downy mass; then he crawled out and made his way to the airlock.

It opened before him and closed behind him as he passed through the air lock into the main room of the sphere. He flung back his head-piece to greet Morkill coming from the control room.

"Well, Dave," he grinned at the other's dark, gloomy face. "I've brought home the bacon!"

"What?" David Morkill's black eyes burned intently into Jerry's. "You

mean you've found—fuel?"

Jerry nodded. "Just that. Enough fuel to drive a thousand space ships from here to Antares and back again—and some to spare. Combined with the neo-hydrogen we have stored in the tanks, we have sufficient power to go home any time we want to. Help me out of this suit and I'll show you a sample."

Eagerly the big man peeled the space suit from his smaller companion, talking incessantly in a flood of relief. "You know, Jerry—this is a load off my mind. You probably didn't realize it, but I was worried. After all, there's still a lot for me to do in the world, and—and it's tough to pass out without any one knowing anything about it." Sudden anxiety shook his voice. "You're sure it's a radio-active mineral you've found?"

STEPPING clear of his space suit, Jerry fumbled in the pack and drew out a lump of quartz. "Here it is. Suppose you decide what it will do—you're the chemist of the party."

Morkill grasped the glowing lava-fragment eagerly, examining it with experienced eyes. Nodding abruptly, he turned toward the little cubby hole beside the control room where he had outfitted a small chemical laboratory.

"While you're analyzing that," Jerry called after him, "I'm going to drink a gallon of water and eat two square meals. Then if that stuff pans out, we can hop over to Tycho."

In the control room of *The Apollo*, Jerry Blaine watched the pitted surface of the Moon drop away from the space ship, its bold highlights and night-black shadows standing out in sharp relief. Tycho, with its tremendous crystal-filled fissures, wide as rivers and straight as ruled lines, filled half the landscape. It was a sight of such splendor that it filled Jerry with awe. Seen from this vantage point, it looked like a queerly formed, uncut jewel of gigantic size,

dropped on its somber setting by a careless denizen of space.

Abruptly Jerry turned from the controls to face David Morkill. There was a scowl on his face.

"Dave," he said earnestly, "this doesn't seem right to me. We had a chance to explore the Moon at our leisure—to see the dark side which no astronomer has ever seen—and as soon as you found we had sufficient fuel, you insisted on returning to Earth. A few days spent exploring wouldn't have made any difference to you and your plans, and it would have meant a lot to science."

Shrugging his broad shoulders, Morkill said curtly, "I think science can struggle along without knowing what's on the dark side of the Moon. And with something as big as this in my reach, I'm not taking chances of muffing it."

He waved a hand toward the central room of the space ship. Along one wall were roughly built bins filled with fragments of glowing quartz—quartz impregnated with radium. Morkill puffed out his big chest.

"There's enough radium there to make the stuff cheap—if I'd be foolish enough to let the price go down. There's also enough there to make me the richest man in the world—enough to permit me to drive the biggest space ship money can build to any part of the Solar System. That radium means power—power to run space ships—and power to do anything I care to do. You don't think I'd let half of a dead satellite stop me, do you?"

Jerry Blaine ran one hand through his bristling brown hair, and surveyed Morkill in silent wonder for several moments.

"Tell me if I'm wrong," he began slowly, "but am I to get the idea that you're planning to use this stuff for the sole benefit of David Morkill? That cheap radium with its power to cure cancer—that cheap radium for the ex-

perimentation of scientists doesn't mean anything to you?"

Morkill smiled blandly. "I always had a lot of respect for your brilliance, Jerry," he said. "You've grasped the situation fully. And just in case you get any queer ideas," he added brusquely, "remember that this is *my* expedition—that *my* money financed it—and that you're only hired help, necessary because of your knowledge of astronomy—but not indispensable."

Jerry held his eyes fixed on those of the tall man for another moment, his face expressionless; then he turned to the vision screen with its image of the retreating world.

The Moon gleamed brilliantly against the black sky with its mosaic of stars. Lights and shadows were merging into one expanse of silvery radiance, out of which the mighty crater Tycho seemed to be glaring balefully.

Jerry heard Morkill's footsteps moving about the space ship, but he did not turn. His thoughts were busy with a heavy problem, weighing all the factors in a situation loaded with dynamite. If Morkill landed on Earth with this cargo of radium ore vastly richer than pitchblende, there was no telling what might happen. He'd have at his disposal wealth and power to do just about as he pleased. His could be a power for good—but since Morkill was Morkill, there'd be little good coming out of it. Jerry's jaw thrust out pugnaciously. One thing was certain. He'd find some way to wreck the other's plans.

He bent over the controls, carefully adjusting the course toward Earth. There'd be two full days in which to decide what had to be done . . .

"Jerry!" he heard an anxious voice from the other room. "Quick—what's this?"

He joined Morkill in an instant; saw him bending over something on the floor.

"I started eating a sandwich," the big

man said jerkily. "Got it out of the food chest—and after the first bite, that—thing popped up before my eyes!"

CURIOUSLY, but with a feeling of repugnance, Jerry studied the queer growth at Morkill's feet. It was a plant, but it was unlike anything he had ever seen, a pallid, unhealthy, wax-like thing, growing out of the sandwich with visible speed. A long, slender stem terminated in a crest of colorless plumes folded together like a grotesque head of lettuce. As they watched, three branches shot out of its base to sink into the sandwich like a tripod, supporting the trunk and head. Slender rootlets spread through the food, absorbing it—and its speed of growth accelerated.

Morkill thrust a curious finger at the repulsive plant—and like a striking snake it lashed at him, the lettuce plumes flung back. Struck and clung, closing on his finger tip! Howling, Morkill sprang erect, dragging the growth with him—and threads of crimson spread through the plant, moving from its head, down through the stem, into the three limbs.

Cursing, Jerry seized the alien thing and wrenched, snapping it off below its head. The foot-long remnant, tough and leathery, whipped and coiled around Jerry's arms like a captured eel. With a shudder he tore it loose—hurled it to the floor—ground it underfoot to a pale pink pulp.

He faced Morkill in time to see him finish crushing the now crimson head of the thing against the smooth metal floor. The big man looked at Jerry, nursing a swollen, reddened forefinger. His face had become a sickly yellow, and beads of sweat stood out on his upper lip.

"I—maybe it's poisonous!" he exclaimed suddenly, his eyes bulging. In a panic he rushed into his laboratory. "Quick, Jerry—do something!"

"I don't think it's harmful," Jerry said with confidence he didn't feel. "A

thing like that doesn't need poison to defend itself." Nevertheless, he applied a tourniquet while Morkill sucked blood from the gash; and after treating it with drugs, he handaged it. While he worked, they tried to decide whence the growth had come, but every suggestion ended in blank uncertainty. They simply didn't know. Jerry thought that in some way a seed, long dormant on the Moon's surface, had found its way into *The Apollo*, and under the action of heat and light, had sprung to life. But how had it lodged upon that sandwich?

As they emerged from the laboratory, Jerry glanced sharply around, half expecting to see others of the repulsive plants; but none were visible.

"I haven't much appetite after that sandwich," Morkill remarked ruefully, "but I think we'd both better grab a bite, since we haven't eaten for eight or ten hours. Then I'll turn in, while you take the first watch at the controls."

Jerry Blaine nodded. "Good idea; but I'll take food with me and eat it at the panel. I don't like the way we're letting the course take care of itself, even if it's supposed to be automatic."

Seated in the control room, Jerry Blaine gulped down a hasty lunch, suspiciously inspecting each morsel before biting into it. He didn't think he'd find any man-eating plants sprouting before his eyes—but you never could tell.

With his lunch completed, he gave full attention to the controls, carefully adjusting their direction, and setting the atomic-drive at maximum speed, with a controlled neo-hydrogen flow and release of radium emanations.

He could hear Morkill moving around in the main room; then the lights clicked into darkness; and in a short while he could hear the big man's heavy breathing.

Time dragged for Jerry Blaine. There was nothing to disturb the monotony of his vigilance. *The Apollo* seemed to hang motionless in space; nothing

marred the placid depths of star-studded velvet blackness through which he sped. . . . He dozed.

A scream jarred him to his senses—a hideous scream of fear and pain! For a split second he stared into vacancy—then he sprang into the darkness of the other room. He heard heavy, panting breaths, heard the sound of scuffling feet—then a choking gasp and another terrified scream hurst from Morkill.

Jerry's fingers found a light switch; and as white radiance flooded the chamber, his muscles froze in consternation. The spectacle before him hurned its every detail into his brain—a vision only seconds in duration, yet which seemed to be a frozen eternity.

David Morkill struggled on the floor beside his bed in the grip of a monstrosity which looked like a gigantic, pale green leech. It had wrapped its noisome folds around his head and shoulders; and from it came a horrible, gurgling sound. Morkill's powerful fingers were buried deep in the flesh of the thing; and as the lights went on, he struggled erect, tore it free, and hurled it against the wall. A shower of blood splattered the floor; and blood oozed from gashes in Morkill's face and body. . . . But that was not all. . . .

From the food cabinet beyond the tall man gushed a squirming, nightmare mass of hideousness. Wriggling, crawling vegetable things; rending, ravenous animal things; things that were both animal and vegetable; things that were—neither! An incredible mound of teeming life, growing with insane speed as had that first plant thing! Growing and spreading like a liquid tide across the floor.

All this he saw in a breath—and now he heard a sound—a clash of metal against metal—and the door of the closet where their space suits were stored burst from its hinges! Out spewed a second nauseous mass of living things!

PARALYZED, Morkill mumbled through twisting lips, his arms and legs held rigid. Gripping his shoulder, Jerry dragged him back, his mind working swiftly. They couldn't fight this without weapons. They needed time. In the lab and control room they might find temporary safety; could decide what must be done. He thrust Morkill into his cubby hole.

"Inside!" he rasped. "Fix up your wounds—and keep your door closed!" Slamming it shut, he leaped into the control room. With a barrier between him and the madness outside, reaction set in and he dropped trembling into an air-cushioned chair. Cold perspiration oozed from every pore, and a fit of trembling seized him. He pressed his hands over his eyes to shut out the vision of living horrors spawned out of some impossible hell.

After a time he tried to give sane consideration to what he had seen. It wasn't a nightmare, that was certain—nor was he losing his mind. It had actually happened, hence it must have a natural explanation. The food—the growths couldn't have come from the food originally, for they had been drawing upon the same supply since they had left the Earth. . . . The space suits! There must lie the answer! Something from the Moon had clung to their space suits, and in the warmth of the sphere had come to life.

The dust, of course! Dust—why the Moon was covered with dust. There were places where chasms had accumulated dust several yards in thickness through the uncounted ages since the Moon had lost its atmosphere.

Jerry remembered something he had read—an idea of Svend Arrhenius, the scientist who had proposed the ionic theory. Life, so Arrhenius had reasoned, could exist under almost any condition—in absolute cold, in utter dryness, in a perfect vacuum. Bacteria, the minute spores of mosses and ferns,

the almost microscopic seeds of fungi—all retained their fertility under amazing adversity. Breezes on living worlds blew them everywhere—always higher and higher—until at last they rose free of the atmosphere to drift through the vacuum of space. Light struck them and drove them farther and farther from their parent world—as light drove the tails of comets—until they found the warmth and air and moisture of another world, and again sprang to life.

So it must have been with the monstrosities beyond the door. For untold ages their seeds and spores had drifted through space. Incalculable distances, some must have traversed, rising from life-supporting planets many light years away—planets utterly alien to Earth, where life obeyed other laws. And finally, as cosmic dust, life spores from worlds and ages separated by vast gulfs of time and space had come within the gravitational field of the Moon, and had settled there. And he and Morkill had carried them into *The Apollo* . . . Their rapid growth? Perhaps it was their nature to develop as they had—or perhaps the presence of all that radium had excited them to abnormally swift development.

Abruptly Jerry Blaine shrugged. The way things looked, all this conjecture probably wouldn't mean a thing. He and Morkill would be more than lucky if they got out of this alive. Anyway, thinking about the problem had brought back his self control.

"Dave," he called through the metal partition between the two small rooms, "are you all right?"

"All right?" Morkill quavered. "Hell, man, I'm practically cut to shreds! And—and what can we *do*? What—are these things?"

"I don't know what we can do—but I have a good idea of what they are, and what we're up against." Quickly Jerry sketched his theory of the origin of the monstrosities.

Morkill uttered a whining curse. "Then we're sunk! They'll keep on multiplying and growing and feeding on each other and everything else organic till they break in on us by sheer weight—just like they broke out of that closet! Do something—can't you? We—we can't pass out like this!"

Jerry could hear him panting through the wall; then he heard him gasp eagerly: "Quick, Jerry—drive for Earth with everything we've got! Maybe we can make it before they break in!"

"Don't be a fool, Dave," Jerry rasped disgustedly. "We can't land on Earth with this cargo! You'd let something like this loose on the human race just to save your own precious neck! Why not try to do something yourself? You're a chemist; you should be able to dope out a way to kill the things."

Frowning thoughtfully, Jerry looked at the image of Earth in the vision plate, a green and silver sphere glowing like a giant moon. That was a new idea that he had tossed at Morkill, one that hadn't occurred to him before. They *couldn't* land on Earth unless they wiped out every one of the monstrosities, and purged the space ship of every life spore. That brought him to his other problem. Jerry grinned mirthlessly. Maybe this was the answer! Morkill must not land on Earth, either, unless he could be parted from his radium—and with himself at the controls, *The Apollo* need never land—anywhere.

Jerry grimaced. A hell of a martyr he'd be! That was a way out—but he'd try to find another way if he could.

HIS glance fell on two unused space suits hanging against one wall, suits put there for an emergency. There were two other suits hanging in the laboratory, he remembered.

"Ho, Dave," he called, "put on a space suit. That'll be some protection if they do break in." He heard an eager grunt from the big man, and as he

slipped into a suit of rubber-covered, metallized, spun-glass fabric, he heard sounds of activity beyond the partition.

A few moments later Morkill exclaimed: "Jerry—I've got something!" His voice shook with suppressed excitement and eagerness. "I'm sure it will work, but it'll take about ten minutes' time. Don't do anything till I call you."

"Good boy, Dave!"

Jerry crossed to the controls, holding the steady Earthward course. He was glad Morkill had snapped out of his whining spell—glad that he'd misjudged him. After all, there was no satisfaction in being teamed up with a coward who couldn't stand on his own feet. There had been times when he wondered how Morkill had found sufficient courage to attempt a space flight—but now that he considered it, enough had happened to him to make any one somewhat nervous.

Impatiently Jerry waited, wondering what means of attack Dave would use. It was a cinch that there wasn't a thing in the control room that could be used as a weapon. If salvation came, it had to come out of the laboratory. While he waited, he listened idly to the sounds outside his door. There wasn't much to hear—only an occasional thud as something fell to the floor, or an infrequent liquid gurgling that suggested loathsome, crawling things. Now he heard a loud, steady hissing, and to his nostrils came an acrid odor suggesting burning flesh. He frowned wonderingly, then shrugged as the sound broke off and the odor disappeared.

"How are you getting along, Dave?" he called finally. There was no answer. "Dave—" The words died in his throat, and Jerry gasped, his forehead furrowing into lines of consternation.

On the vision plate before him he saw the tiny emergency space boat they had kept in the vacuum chamber of *The Apollo*! He had forgotten it—but

Morkill hadn't! And now Morkill had run out on him! He had the emergency rations that were kept in the little craft, as well as sufficient fuel to land on Earth! The dirty rat!

Jerry caught a glimpse of Morkill's grinning face at one of the glassite port holes—and he cursed savagely. The other had flung back his helmet—was laughing at him! Then suddenly the laugh broke off; and Jerry's eyes strained at the vision plate.

Something, a writhing mass of rope-like tentacles, had leaped from nowhere—had wrapped itself around David Morkill's head!

Man and monster dropped from sight.

Rigidly Jerry watched. The little sphere drifted along beside *The Apollo* for endless minutes—then suddenly it fell behind the larger craft—back toward the Moon. Mechanically Jerry swung the space ship around; saw the life boat dropping plummetlike through emptiness. It vanished in moments in the brilliance of the dead world, falling free, flashing toward destruction.

With trembling fingers Jerry Blaine resumed the course toward Earth, then wiped cold perspiration from his forehead. That was—that! A horrible way to go out—yet Morkill deserved it. Yellow, clean through—and his cowardice had caught up with him. That hissing—it must have been a blow torch or the action of a chemical with which the big man had burned his way through the monster horde. He'd been sure his plan would work—and it had—but now he was gone. That solved one problem.

Jerry's eyes narrowed speculatively, and the muscles of his jaws knotted with sudden determination. There still remained the problem of the things—and he'd soon settle it in one way or another. If he could reach the laboratory, he might have a chance. If he couldn't. . .

Jerry grinned with one side of his

mouth as he snapped shut his glassite headpiece, and started the air purifier. Then he flung open the door and leaped out crouching. He heard a faint rush of air—and he stopped short.

Uncomprehending, he surveyed a spectacle that looked like a painting from the brush of an insane, alien artist. Everywhere incredible growths, splotches of jarring color, masses of disgusting forms coated floor and walls and ceiling. But in none was there sign of life! It seemed as though they had burst under internal pressure, and now drooped or lay flaccid in death!

Jerry's roving eyes saw the open airlock, saw the black of space beyond—and he knew the answer. Morkill in fleeing had failed to close the vacuum chamber! The air had rushed out; and with pressure removed, with atmosphere gone, the alien things had burst. Were dead!

There was justice in that, Jerry thought grimly, justice that David Morkill could never appreciate.

He started toward the airlock, then paused. If he closed it, and permitted the air supply to renew itself, there was every possibility that other growths might spring up. He had better destroy every vestige of the things first, perhaps even go over every inch of the walls and floor to be certain that no microscopic spore remained.

HIS glance fell on the bins with their heaps of radium ore, now hidden beneath a thick film of foulness. A fabulous fortune—and all his. But did he want it? Did he want to bring it to Earth? There was so much to consider. Was the human race ready for so vast an amount of radium? Could men be trusted with the power that this could create? He thought of the petty hickering, the trivial wars, the selfishness and unrest, and he shook his head.

And what of its action upon these seeds of life he had brought from the

Moon? Similar dust was settling to Earth every day, and nothing happened. Was the radium solely responsible for the spectacle before him?

With his mind a turmoil of uncertainty, Jerry Blaine returned to the control room and looked at the spreading disc of green and blue and silver beneath him. Suddenly his jaws clicked together. If there were some way in which he could land on Earth without the space ship, some way in which he could drift down through the miles of atmosphere alone, Man need never cope with this possible menace from the Moon.

Deep in thought Jerry watched the Earth draw closer. Hours passed while he weighed possible means of his landing safely. Then suddenly he rose, a broad grin on his face. He saw something out of childhood memories—a big balloon shaped like a bloated fat man, tugging at the end of a string . . . There was work for him to do . . .

A transformed Jerry Blaine tensely watched a sea of cloud rushing up toward him as he stood in the open airlock—a Jerry Blaine who looked like an in-

THE END.

flated balloon. Over his own space suit he had put another, a suit designed for a much bigger man. And the space between the two suits he had filled with neo-hydrogen from the fuel tanks of *The Apollo*, a gas with vastly greater lifting power than ordinary hydrogen or helium. Tensely he watched for the moment when the space ship would enter Earth's stratosphere—the moment it would flash along a course almost parallel with the surface far below—the moment when he would leap free, would drift and float slowly downward to the world of men—and *The Apollo* with all its cargo, heated to incandescence by friction with the air, would drop like a flaming meteor to destruction. . . .

On the night of August 10th at 9:38, astronomers on the west coast of the United States observed the sudden appearance of an amazingly brilliant meteor in the Constellation Virgo. It sped across the sky like a lance of silver radiance, until suddenly it vanished in the pallid light of the Moon—a visitant from space that drifted to Earth as impalpable, lifeless—dust. . . .

EXCURSION TO POSSIBILITY^N

(Continued from page 69)

Tensely we wonder what will happen. The plane is equipped with pontoons for emergency landings on water, but the Commander has told us there is no water near the capitol. Yet the ship drives straight on.

Soon the lights of the capitol are below us, the plane is circling over the landing field. The Commander seats himself before an instrument, sends a message below. Instantly there are signs of increasing activity. As we slowly circle the field, hoses pour out a molten lake of viscous liquid over the ground. And swiftly, though it is as warm as June on Earth, it turns to ice!

But as the pontoons bring us safely down on the smooth surface, we are more relieved than impressed. The synthetic substance for rapid production of artificial ice—as fast a skating surface as the natural—is already known to us as a trade name, Iceolite!

As we are carried off to the near-by Hall of Congress, we have the feeling that we shall never encounter anything, however incredible, that does not have a familiar reality. But we are ready to reverse that opinion when the elevator appears that is to take us up to the top

floor of the building. It is a plain metal platform without cable overhead or other connection with any lifting mechanism!

A powerful electro-magnet, we reflect after consideration, could turn the trick. But as the elevator rises with its heavy load, we look up at the top of the shaft and see no such huge, ponderous equipment as would be required. There is nothing visible in the open rectangle above—only a short, metal rod projecting over the edge. But when we are closer to it and can see the coil of light wire around it, we find that it is the electro-magnet raising this tremendous load!

Yet we are again disappointed in our quest for wonders that are fiction and not science. We recall that General Electric engineers have recently developed a synthetic magnet of aluminum, nickel, cobalt and iron. Without even the strengthening aid of a surrounding electric current, it will lift 1500 times its own weight!

But we remember that we shall soon see what—strange, we hope—form of life populates this world. For that reason we will return here on our next Excursion to Possibility.^N

LIGHTNING STRIKES ONCE

by HARL VINCENT

Author of "Newscast," etc.

Lightning strikes in one place only once—even when it's man-made!

IT was on the last green at Rip Van Winkle Country Club. Mary May, her ash blonde hair breeze-whipped, her athletic sport-togged young body poised in a perfect stance, waggled her putter a few times and struck. The ball dribbled across the six feet of green and clinked into the cup.

"There!" she exclaimed triumphantly. "It's a tie score, Max. All bets off."

Maxwell Kardel, tall and darkly handsome, expensively attired in somewhat too conspicuous golf togs, looked down at the flushed and radiant girl with an indulgent smile.

"Good girl," he approved. "A forty-three on this nine is really something. Even the pro doesn't beat that much. And now, what say we get going and on the job?"

"All right, boss." Mary looked up with a brilliant smile that somehow faded as she observed the possessive look in her companion's eyes. "Let's go."

They raced to the clubhouse, separately showered and changed to street clothes, and soon were in Kardel's classy roadster, burning up the highway in the direction of the laboratory.

Hidden away in the wooded portion of Round Top Mountain was the rambling structure of the Jules-Kardel Laboratories, their existence unknown to the public, even in the neighboring resorts and towns. Many things are well hidden in the Catskills.

Morris Jules, Kardel's partner and financier of the venture, was being duped. He didn't know it yet—Kardel hoped. And Jules, he had observed, was likewise in love with Mary May. Kardel would fix that, along with his own financial difficulties.

His roadster pulled into the clearing surrounding the laboratory. He parked it near the outside steel structure on which were mounted the rotatable

energy projectors and the supplementary controls.

Mary laughed a bit nervously as he lifted her to the ground with a gay gesture of gallantry.

"Wonder if Morris is here," she said. "What difference? We've done nothing but take a morning off."

"Y—yes." The girl ran toward the laboratory. Kardel squinted at the sky and at the settings of the supplementary controls before following her.

Jules was in the laboratory office and he was bent over the books, his broad shoulders hunched, his thick shock of sandy hair awry. Mary was at his side, talking softly and rapidly. She ceased her speech when Kardel entered.

A tension was here, undoubtedly, but Jules looked up and grinned with his usual geniality. Kardel's heart had skipped a beat; now it steadied. Obviously his partner was not yet aware of his perfidy.

"Mary did a forty-three for the nine today," he ventured.

"So she told me. That's swell. And it's good for you two to get out like that once in a while. What's on this afternoon?"

"I had planned to try a large area temperature reduction. There are low clouds spreading and by evaporation of these we should get some results. At least something for the book."

"Good," Jules approved. "Go ahead, Max. I have to go down to Cairo for a few hours and I'll watch the thermometers there. You and Mary do the job. I'll be back."

"Max." Mary laid a soft hand on Kardel's arm when Jules had gone. "You're not planning anything—wrong—are you?"

Kardel laughed disarmingly. "What ever made you think that, little girl?"

"W—well. You're so mysterious about some things. And I don't quite understand all of this weather control tech-



nique yet."

"You will. Stick to me, honey, and you'll wear diamonds."

There was a doubting ring to Mary May's answering silvery trill, but Kardel missed it.

"We'll do this with the inside controls," he told her, "and I think you'll get a kick out of it all."

They went in from the office to the laboratory proper, where were all of the recording and indicating instruments, main controls, and the huge transformers which stepped up the purchased public utility power to the tremendous potential necessary for this experimental work.

Kardel was a genius in this static induction work, there was no doubt of that. In the main, these weather control experiments were his own idea. Without Jules, he could not have carried them out. He had been sincere in the beginning, but with the coming of little Mary May from Rensselaer Polytechnic Institute as laboratory assistant all that had changed. He still proceeded with the experiments but he wanted to make an impression on the girl, so there were certain things he was holding up his sleeve. And to make an impression he needed money. He had taken it, thousands of dollars that belonged rightfully to Jules. This he had done by conniving with crooked agents in the buying of apparatus and laboratory supplies, and by extracting actual cash from the safe from time to time—by faking the books and purchase orders. Kardel was not all scientist.

HE snapped on the vision screen and focussed. The pickup was aimed skyward and all that was visible on the softly lighted plate was a low lying white cloud bank. Measurements showed that it covered an area of about twenty square miles surrounding the mountain tops. Otherwise the sky was clear and blue. This was ideal for what he intended to try. Perfect. It would succeed and would allay any suspicions Jules may have had. Perhaps even—later in the day—the final coup might be accomplished. He could not much longer hope to escape detection.

"Eleven hundred and fifty feet," he told the girl.

While she was setting the controls to project up into that cloud bank the ener-

gies that would evaporate them and reduce the air temperature in the neighboring territory, he slipped into the office, opened the safe, and took from its cash drawer all of the remaining paper currency. A quick thumbing of the large denomination bills told him there was nearly \$10,000 here. Jules was a fool for keeping such large amounts on hand!

Mary had the controls all set and seemingly had not noticed his few minutes absence.

"All okay," she declared. "Give her the gun."

Kardel checked the settings, tripped the latch of the main oil switch, and the transformers groaned musically to the sixty cycle current that surged through them. They seemed almost to thump against the concrete under the tremendous load imposed. The red ink line on the recording wattmeter jumped well above the middle of the scale.

"Look!" Mary May, scanning the vision plate, was excited. The clouds above were thinning rapidly.

Kardel laid caressing fingers on the smooth curve between her neck and shoulder. Imperceptibly to him, she flinched under the touch.

"Look, Max," the girl repeated. "It works."

"Of course it does. And now watch the outside temperature."

It required a few minutes for the heated air near the ground to cool by the flow of its heat toward that upper layer where the clouds had been. Then the needle that painted constantly the green line of outside temperature on the circular chart of the recording thermometer was definitely lowering. 72, 71, 70, 69.

"Three degrees drop," Kardel exclaimed. "Should be more—watch."

The inked green line dropped finally to 67 and there it stayed. The vision plate showed not a cloud in the sky. Mary started to calculate the actual heat transference which had been accomplished.

"Max!" she finally burst out, and jumped to her feet and grabbed his shoulders. Kardel thrilled to this unprecedented demonstration; now he knew that Mary May was his own. "Max—we can make clouds and rain. We can destroy clouds and produce colder weather. It's wonderful."

"You don't know anything yet, little girl. We can do lots of other things."

"What, for instance?" Mary May was suddenly cool and aloof, though Kardel was too infatuated to notice.

"We can make lightning."

"Oh, that's been done in the laboratory. And we've produced storm clouds from which flashes have emanated."

"Sure, but I mean lightning out of a clear sky. A bolt from the blue, as the saying goes."

"You—what?"

"Exactly that. I don't want Jules to know about it yet, so what say we try it while he's in Cairo? It's an outside job."

The girl's eyes glistened with excitement; she was an enthusiast, a true pioneering spirit motivated her. But Kardel thought the shine in those upturned blue eyes was for him.

The outside racks were two in number, one being the substation of the power company where 66,000 volt transmission line current was stepped down to 2,400 for use in the laboratory, the other a towering steel framework with the trunnion-mounted projectors and other apparatus better kept away from the building proper. This had not needed to be so high; it was Kardel's ego had reared it so. He liked to be surrounded with impressive, colossal equipment. . . .

At the latter, near which Kardel's car was parked, the man and the girl were soon bending over the control board.

KARDEL was explaining. "It's not like rain production, May. Then, as-you know, we project energies aloft fanwise, so as to cover a large area and charge a cold air layer between two warm layers and thus artificially induce the collection of moisture into clouds. Now focus a projector so as to direct a slender beam of energy to any layer you may choose, build up locally a terrific static charge, and when the potential with relation to the earth has reached a sufficient value—well, what is the exact equivalent of natural lightning, an electrical discharge, just roars across the gap to equalize the potentials. Quite simple."

"Quite," the girl agreed dryly. "I'll get it through my thick skull, I suppose." She wrinkled her smooth forehead into a frown. "But of what use

can it be?"

Kardel chuckled knowingly. "No use, of course. But it's a most interesting experiment."

Mary May began to think of wars and rumors of wars. Lightning! It possibly might be used as a weapon, if it could be controlled. Was this what the dark-eyed man at her side had in his mind? She did not speak out her thoughts.

Kardel was swinging one of the projectors about on its trunnion mounting, aiming at a point a few hundred feet above the woods several hundred yards distant. He made the necessary focussing adjustments to narrow down to a slim cylinder its ordinary inverted cone of radiation. The power was cut in.

Mary May gazed skyward, still thinking puzzledly.

Twin direction finders aimed at the spot of energy concentration up there showed the precise location from which to expect the flash. Mary May had no doubt that there would be a flash; when Kardel promised a demonstration he never failed to produce.

"It's building up," the man chuckled, pointing to the static potential indicator. "Won't be long now."

Then: "Cr-raaa-sh!" A blinding jagged ripping flame, instant thunderclap deafening, from rushing tons of air filling the vacuum which had been created—a smoking tree with limbs whitely split and hanging awry. Though she had anticipated it, Mary May was startled out of her breath.

Kardel's arrogant smile broke into a laugh that echoed in the clearing. "Now!" he almost shouted, "we can go places and do things."

"Go where? Do what?" Mary May was more than ever wondering.

The man sobered. No time now to give himself away. "There will be real money in this," he lied. "Paid-admission demonstrations—oh, lots of ways."

It was a lame explanation and in no way satisfied the girl. Still, she could not imagine the truth of the thing. If there was anything sinister contemplated, as she sensed there was, she had not yet put her finger on it.

Kardel was going into one of his long-winded discourses, pointing out the precise control settings, explaining the time element, the correct potential and frequency variations—then he broke off as the drone of a laboring motor came to

their ears. Jules' car was climbing the winding rutted roads up the mountain.

It struck Kardel with sudden force that the thing must be done now. The package of bills was a worrisome lump in his pocket. If Jules went into the office and, for any reason at all, should open the safe . . . yes, the time was here. He planned swiftly; he would have to deceive Mary May as well as his partner. And she would never know. She did not realize he could control the precise point at which his bolts struck!

"Mary," he said with a show of enthusiasm. "Now is the time to show this new stunt to Jules. So, when he comes, we'll stay out here and run the show; we'll let him go into the laboratory without telling him what is in the wind, then astonish him with a swell thunderclap and bring him out on the run to see what's up."

This sounded reasonable. "All right, boss." Mary May was starting to forget some of her doubts.

Jules' car rounded the curve and nosed into the clearing. He parked it beside Kardel's and rushed to the two. "Perfect!" he approved. "The temperature in Cairo dropped five degrees. You know, I think we can do something with that. Think what it will mean if we can cool an entire sweltering city in August."

KARDEL was thinking of something entirely different. And he saw the look that passed between Jules and Mary—the girl's flush of pleasure told him she thought a great deal of the older man. Well, what he was going to do now would fix all of that. Mary would soon be his.

"Right," agreed Kardel. "There will be something in this cooling scheme. And I have a new one for you, just worked out today. You go down to the laboratory and wait for a demonstration. Mary and I will control it here."

Jules' sensitive mouth twisted into its infectious grin. He had known Kardel to do this sort of thing before and had never known what to expect. But always it had been good. "Right," he said. "I have to do a little work on the books anyway. And I'll be looking for something new and startling." He moved away to the building across the clearing.

"It'll be startling, all right," Kardel thought grimly, "but not in the way he may think." To Mary May he said:

"We'll generate an even more powerful bolt this time. I'll do the adjusting and you stand by the oil switch to trip it shut when I give the word."

So Jules had some work to do on the books. It was indeed high time the thing was done. Once this bolt hit the wooden structure, with Jules right next to the big safe, there would be two ends accomplished. Jules out of the way—electrocuted. And, by the ensuing fire, the falsified records.

Mary May was nervous and ill at ease, again sensing something wrong. Why shouldn't Jules be out here watching the entire experiment? But she took her post at the oil switch unquestioningly.

Kardel walked over to her before commencing the work of adjustment. He lifted her hand to his lips. "Mary," he said. "You must know that I love you. Surely I've made it plain enough. Do you suppose you could care enough to—"

Mary's smile was reassuring yet non-committal. "Not now, Max," she pleaded. "After working hours we'll talk it over."

Kardel would have been amazed at the look of sheer revulsion she cast in the direction of the retreating form. No, it could never be Kardel. She knew now definitely that she loved Morris Jules.

Kardel was working swiftly with one of the projectors. Direction finders were set. From her position at the oil switch, Mary May noted the angles. Dear God!—it came to her in a flash. Kardel locating a potential focus directly above the laboratory. He intended to kill Jules.

Deserting her post, she ran, sobbing soundlessly, toward the frame building. She must warn him; must stop this. Could she be in time? Kardel didn't really need her at the main switch. He could do it all by himself. And she would be helpless to prevent. "Oh, Morris, Morris, what a fool I've been. Morris!" she finally shouted.

On that instant she was thrown flat, her body tingling with shock, her ears ringing to a drum-shattering thunderclap, her eyes blinking from the light flare that had riven the air so close by. She rose. Morris Jules was standing in the laboratory door. Safe! Turning and gazing amazedly, she saw a crumpled form, a bent and twisted tower structure. Max Kardel had been the victim, hoist by his own petard.

Jules was here now, for some reason
(Continued on page 109)



Write us your question on scientific subjects. So far as space permits, all will be answered in these columns. Preference is given to those which seem of the most general interest. Tell us what you think of our choice.

ELECTRONS SHOW UP MOLECULES.

Dear Sir:

I believe I am only one of many readers who would like a description of the operation of the electron microscope, also some of its achievements.—L. H. E., Washington, D. C.

A microscope using visual illumination has as the limit of its power of magnification the wave length of light. Sub-microscopic objects, particles smaller than this measurement, can not be seen because they slip BETWEEN the meshes of the light waves. But electrons manifest waves many thousands of times shorter than those of light—and therefore make possible magnification as much as TWENTY-FIVE TIMES GREATER than in visual microscope!

Electrons, of course, can not be focused by a lens, but an electric or magnetic field will act on a beam of electrons as a lens does on light. The beam, generally, is first straightened out in a magnetic coil, then passed through the object under study, finally focused in another coil. A voltage of the order of 50,000 is commonly used. The result is a magnification power that increases size more than 20,000 TIMES!

The idea of electronic magnification is not new. Its application to telescopes has also been suggested, by converting feeble starlight into current with photo-electric cells. Such a device, it is estimated, would make possible a telescope the equal in power of a 2,000-INCH REFLECTOR—ten times larger and infinitely more powerful than the 200-inch "giant" now being assembled in California!

But for all the staggering vistas of metagalactic space this possibility promises, the electronic microscope itself, in the scant two years of its existence, has actually wrested achievements at least as remarkable from the equally remote world of the microcosmos. Pictures—electrons, like light, make impressions on photographic emulsions—of deadly pus germs have been obtained as large as pennies! Of even greater importance to science, the sinister viruses that have hitherto been unquerable, are being brought into its range of vision—and hence into its power!

And as an accomplishment at present of only theoretical value—but pointing the way to man's mastery of all matter—fluorescent screen projections have been made with the electron microscope of crystals in which THE MOLECULES THEMSELVES CAN BE DISTINGUISHED IN THE MOLECULAR STRUCTURE!

LAZY LIGHT (AFTER WORLD'S END)

Dear Sir:

I have come across the statement that there are stars which shine brightly but are invisible. Please explain this phenomenon, if true.—A. J., Los Angeles, Cal.

Astronomers, though they can not offer conclusive proof as yet, strongly suspect there are such stars. The seeming paradox of radiation at the source which is invisible at any external point, could occur only in stars of unusually high density. Their consequently enormous gravitational force would slow up all light emitted so that it would take an infinitely long time to reach an external point. And if it ever did, it

would reach that point with zero energy and could not be detected by any instrument known to science!

Such stars are of the type called "collapsed neutron stars." It is believed they are the final end product of the immense stellar flareups known as super-novae. But the theory of "lazy light" does not rest solely upon hypothetical grounds. Astronomers have observed stars apparently PASSING INTO the collapsed neutron state!

One super-nova reached its maximum brightness late in 1937, has since been closely watched. In that short space its density has become such that one cubic CENTIMETER of it would weigh two-and-a-half MILLION pounds. At the same time its light has shown an extremely wide displacement toward the low energy, or red, end of the spectrum. And that can be attributed only to the increasing gravitational force!

Super-novae, as well as being the giants, are the patriarchs among stars. Our own sun represents a much earlier phase of stellar evolution. But though it will never, for reasons that will be shown, reach this hypothetical stage of "darkly glowing," it is at this moment at the threshold of an actual change of greater interest—of vital importance!—to the inhabitants of its third dependent planet.

Stars start out their careers producing radiation by "burning up" the elements of which they are composed, aging as this source of energy is dissipated. Next stage after their exuberant, prodigal youth is one of progressive shrinking, in which radiation comes from gravitational energy alone. Before this relative maturity is attained, however, the star's mass must redistribute itself. In the process, increased amounts of gravitational energy are temporarily released, causing additional brightness. It is these flare-ups which are identical with "new" stars, or novae.

Once contraction begins, the careers of stars are differentiated on the basis of individual characteristics. Those whose original mass is less than 3.2 times as great as that of the sun, dwindle to "white dwarfs." Composed centrally of a degenerated electron gas in part, they have very small energy outputs. While their density runs to thousands—to a MILLION—times that of platinum, it is still too low for gravity to chain their light to them! Consider again the super-nova referred to above and translate its weight into comparable terms. It is some FIFTY million times that of platinum! To the super-nova alone befalls, eventually, the paradox of hoarded light. The fate of the smaller stars is to enter their last decline, becoming "red dwarfs" and growing ever weaker until at last they are utterly dark and cold.

Larger stars, however, have still a long, active prime of life ahead. For them the contraction creates a central neutron core which is an almost unlimited source of energy. With an increased amount of energy liberated, the atmosphere expands, bringing them into the class of "blue giants." But then something may go wrong with the delicate mechanism balancing the outward force of radiation pressure against the inward force of gravity, a rapidly expanding shell of gas is thrown off, brightness increases hundreds of thousands of times—in one instance to FOUR HUNDRED MILLION times that of the sun!—and a super-nova is born.

Such "explosions" have been advanced as the source of cosmic rays. (Evidence against such a view was presented in these columns in the February MARVEL.) In any case, super-novae cease to exist as ordinary stars. Protons and electrons coalesce on the surface. Having no electrical charge to repel one another, they run down and are packed into the growing core—in one known case producing a density of 6,000,000 tons to a cubic inch, or some sixty

BILLION times that of the Earth! For the supernova then begins a timeless existence as a "black" sun—a heavy, sluggish, "neutron star."

As for our own sun, while it is far distant from the time when it will become a nova and helix flaming gases out into the planetary orbits, and still more remote from ultimate cold lifelessness, in its present "burning" stage there is a strong threat of the end of the world! The sun is not burning in the sense of forming oxygen compounds. Rather, there is occurring a transmutation of elements, a conversion of mass into energy in accordance with the Einstein equation: mass equals energy multiplied by the velocity of light squared. The key "fuel" is hydrogen which, in building up heavier elements, is not destroyed but becomes another kind of atom, losing in the process a small part of its mass. This "packing fraction," equal to about eight parts in a thousand, becomes energy—and bathes the earth with beneficent radiance and heat. But as the sun loses hydrogen it converts hydrogen faster, when its hydrogen content drops but a bit lower its radiance will increase a hundred times—and then the earth will MELT!

True, at the estimated rate of conversion it will be many millions of years before the end is in sight. Yet there is one factor that makes this more imminent than any other cosmic threat to the world. The moon may explode, a roving star catapults the solar system: there is evidence similar catastrophes have occurred. Or a comet may strike the earth. But the latter two are of a lower order of probability and there is no certainty of a disastrous effect upon the earth. The moon may well approach closer, first raising huge destructive tides, then shatter, bombarding the earth with its great fragments. But no computation based on accepted data can bring that possibility much closer than a million years.

THE OTHER IS WITH US EVERY MINUTE. In stellar mechanics there are many obscure factors. Something—no one knows what—has sharply altered the earth's rotational speed several times in the past one hundred and fifty years. "Something" may brush the sun's fine balance of temperature, radiation, and gravity—and turn our corner of the galaxy into a cosmic holocaust!

ATOMS GO GAY

(Neutrino and Neutretto)

Dear Sir:

What, actually, is the much-discussed X-particle?—L. A. H., Augusta, Me.

Until twenty years ago the atom was thought indivisible, which is what its Greek name means. Then Rutherford, using radium emanations as bullets, succeeded in splitting atoms into protons and electrons. The former were positively charged, the latter light and negative-charged. With these two particles, nuclear physics went into business—and has since added others, actual and hypothetical, to its stock in trade. After the discovery of the neutron, an electrically neutral or inert proton, and the positron, or positive electron, two more particles were clearly needed to complete the inventory. These, a negative proton and a neutral electron, the latter named "neutrino" in advance, to date have not been found. But the Japanese physicist, Yukawa, theorizing more practically to explain energy exchanges in atomic nuclei, postulated still another particle, between proton and electron in weight, and it is this, first discovered by Anderson of Cal. Tech, which is known as the X-particle.

Called also the "mystery particle" for a while, until its true nature was ascertained, it is now generally known as the "baryon" or heavy electron. Created by cosmic ray bombardment of air atoms ten to twelve miles above the earth, baryons are about 240 times as heavy as electron, one-eight as heavy as protons. Raising down with 10,000,000 electron-volt energy, both positive and negative particles have been discovered. And now theory jumps ahead again with an intermediate weight particle of no electrical charge, a neutral baryon, the "neutretto."

So while the search goes on, neutrino and neutretto dance unseen within the fickle atom.

Having been found to be such, the atom is now treated a bit more familiarly by some. Two years ago the Italian physicist, Fermi, saw no reason why atoms heavier than uranium should not exist. Accordingly he bombarded uranium atoms with nuclei, and thus created eka-uranium—the 93rd element! Eka-uranium, No. 94, followed soon after and since, abandoning all respect, Fermi has run the count to 97—and the end is not in sight!

These artificial elements, however, are unstable. But the nature of baryons suggests that when they

can be used as bullets, that defect will be removed. Then, at long last, we will have fully realized the dream of the medieval philosophers—transmutation of the elements!

Meanwhile, in another field of science, history repeats itself. A protein molecule has been attacked with ultra-violet light and split in two! There is an exciting parallel between this fact and Rutherford's first step in the conquest of the atom. **HOW FAR WILL THE PARALLEL CONTINUE?** Perhaps until a Fermi of biology completely masters the complex protein molecule whose secrets have hitherto defied all other research—**THOSE MOLECULES WHICH ARE THE BASIS OF ALL LIVING MATTER!**

Paltry dreams of medieval philosophers.

VENOMOUS VISION

Numerous readers have expressed their interest in the letter-reply captioned "Third Sight," which appeared in this department in *MARVEL* for February. In response to their requests, we herewith offer more information of the same nature.—Ed.

For the large number of people who suffer from various forms of eye trouble, relief has come from a strange quarter. Dist vision, circulatory and muscular disturbances and inflammation of the eyes—all are now being treated with **SNAKE VENOM**.

Discovery of this unexpected property of the poison came through observation of the effects of snake-bite on persons already suffering from eye trouble. In cases of severe bites, darkening of sight or even temporary blindness resulted. But those less severely bitten found their vision greatly improved!

Two constituents of venom have already been isolated, but the specific eye principle has not been found in this complex compound of proteins and enzymes. Yet it exists, and in small, diluted quantities snake venom is now being used with complete safety to strengthen sight. Injected under the conjunctiva, the delicate membrane covering the eye, it also relieves the severe pain arising from inflammation of the cornea, even stops bleeding from ocular diseases.

This last effect, however, probably is due to another of the constituents of venom. One is a specific nerve poison of great effectiveness as a paralyser. The other is an enzyme which has the general property of causing the blood to coagulate. Presumably, it will soon be tried in the treatment of hemophilia, for which another "freak" remedy already exists.

Hemophilia, famed as the Curse of the Bourbons, but unfortunately found frequently outside royal families, is an inherited condition in which the blood, once started flowing, takes an inordinate length of time to coagulate—sometimes too long. But recently severe cases of such bleeding have been stopped in a very short while by the application of **HUMAN MILK**.

It is not known whether its effective principle is a hormone or an enzyme. Since hemophilia is a "sex-linked" characteristic, transmitted by females to their male descendants, it appears that the elements of the condition present in women are held in check by some female "essence." This argues for a hormone as the effective principle in milk. Partial success against hemophilia with injections of placental or ovarian extract is further evidence. On the other hand, the fact that effects similar to those of milk are obtained from the snake venom enzyme, supports the other explanation. In any case, the importance of these related discoveries as a treatment for a relatively infrequent and obscure pathological condition is overshadowed by their value in surgery.

Operations cannot be performed on persons whose blood will not clot in from three to six minutes. Many must therefore be administered substances that gradually thicken the blood over a period of time, causing possibly dangerous delay. Now even emergency operations on such persons can be performed at once—thanks to milk and snake venom!

Still more people, again with regard to eyes, will benefit from an improvement in testing for strabismus in refraction. For this purpose, drops of aminocyclodiol medicines are used to dilate the pupils, paralyzing the muscles of accommodation. But the drops that produce the best results, such as homatropin, also have long and inconvenient after effects. Now, however, the action of homatropin is speeded by following it with Benzedrine sulfate or ephedrine in an alkaline solution—and patients can read even newspaper print again in a few hours!

Another great human need is met by a minute radio

tube which is the basis for mechanical "ears" **FOUR TIMES AS SENSITIVE AS THE PRESENT TYPE.** Developed primarily as an improved hearing aid, the tube is only $1\frac{1}{2}$ " long and $9/10$ " in diameter. It operates from a battery no larger than a flashlight cell, and the entire apparatus can be incorporated into supersensitive hearing aid less than four inches long!

It has been suggested that the instrument be adapted to foot-soldiers and police radio receiving sets. The latter, at least, would derive value from it. But it still will be another group to whom the principal benefits of this device will accrue—**THE MORE THAN HALF OF THE POPULATION OF THE UNITED STATES WHO SUFFER TO SOME DEGREE FROM HEARING AILMENTS.**

In these ways, and in many others we will discuss from time to time when requested by our readers, does science labor to make a better, **HEALTHIER** world.

EVERY MAN A GOLD MINER

Dear Sir:

What is Monel Metal and what is it used for? I have read that it has gold and silver in it.—D. R. C., Fall River, Mass.

Monel Metal does contain gold and silver—also platinum, iridium and a host of other precious metals! Yet it is only an alloy used for ordinary industrial purposes.

The alloy consists of copper and nickel in the proportion of 3 to 7. It is the latter which holds the answer to the paradox. The Canadian ore from which the nickel is extracted also contains definite and recoverable amounts of many rare and valuable metals. But to extract them involves a costly leaching process with acid solvents. They are recoverable, but at a cost greater than value!

So, unfortunately, though the nickel in your pocket may contain more than five cents worth of gold and platinum, it is still just a jinx.

WATCH WHAT YOU'RE SAYING!

Dear Sir:

I have heard that sound can now be transmitted by light. How can this be done?—W. H., Sibley, O.

Not only has a new system of communication been devised in which a beam of light transmits the voice—but the apparatus is so simple that anyone can make it! Almost all the parts are familiar things, easily accessible. A microphone and a loud speaker, or a few telephone parts. A little harder, a photoelectric cell. But most important, nothing more than an electric heater and a spare flash-light bulb!

Sound is picked up by the microphone, transformed into high frequency electrical impulses that are made to set on the bulb filament. The reflector gathers up the fluctuating light beam and concentrates it on the photoelectric cell, which transforms it into electrical impulses again. These are fed into the reproducing apparatus—and the original sounds are recreated!

The practical uses of the system can only be conjectured at. Perhaps when its range has been increased, it will be diverted to liaison communications at sea—impossible to break, difficult to interrupt, particularly if invisible light frequencies can be adapted. But if we are to consider possible future development, we would hope rather that it would be used in interplanetary communication, establishing contact between Earth and some older, wiser world and bringing greater good to man.

At present, however, the range of the system is sharply limited. Yet it **WILL** be improved—and perhaps by someone who reads these pages. . . .

SCIENCE AND CRIME

Dear Sir:

I am interested in finger printing and have been trying to trace down a newspaper reference to a new method of bringing out invisible prints. Can you give me any information on this subject?—E. W., San Francisco, Calif.

The method you refer to is truly a great advance in science's relentless war on crime. Not only are invis-

ible finger prints made visible—but it is done with invisible light!

Finger prints on paper frequently are too faint or old to hold powder which will bring them out. In such cases, the procedure now is to make them insoluble by exposure to the fumes of Fleming's reagent, used by biologists to fix fatty substances. The paper with the prints is then dipped in a fluorescent dye. As a result, the entire sheet, and any otherwise obscuring writing on it, glows with a brilliant blue-black color—except the finger prints. They are seen, **BY THE ABSENCE OF LIGHT**, as a clear black pattern!

Another blow at crime is the discovery of chemical tell-tales for ink—plain, red, green—which makes it possible to restore any ink erasure! And, again, with regard to finger prints, a new alloy has been developed of bismuth, lead, tin, iridium and cadmium. With a melting point of only 116° F., it can be used for permanent, metal impressions of finger prints in three dimensions!

The only thing left for the criminal, it seems, with science bringing its every resource against him, is to operate in the fourth dimension.

INVISIBLE MOONS— LOST PLANET

Dear Sir:

Would you settle an argument as to whether asteroids could have satellites? Also, do any have atmospheres?—H. J., Flint, Mich.

It is possible—and as we shall see, probable—that asteroids have secondaries. It is almost certain that they do not have atmospheres—but therein lies a mystery whose possibilities far exceed the most imaginative flight of fiction.

First, however, a bit concerning asteroids, or planetoids, in general. Miniature worlds circling the sun in planet-like orbits between Mars and Jupiter, they range in size from diameters of nearly five hundred miles to a few inches. They are thought to be either remnants of solar material thrown off at the same time as the major planets but kept from uniting by the gravitational influence of Jupiter, or the debris from the explosion of a Lost Planet!

Some twelve hundred of these bodies have been discovered, but it is believed that there are actually from three to thirty times that number. About three hundred had been observed up to the time photography was first used; since then the count has been quadrupled. A newly devised method, interesting also for its ingenuity, promises to raise the number of planetoids to its true proportions.

In the early method, the telescopic camera is fixed in *foresight* so driven by a clockwork drive as to exactly offset the rotation of the Earth on its axis. Stars then appear as sharp, stationary points on the plate. But planetoids, moving with reference to the Earth, manifest themselves in two dimensions, as short lines.

More sensitive is the new method. A great majority of planetoids have orbits almost equally distant from the Earth and therefore move at the same speed with reference to it. If the camera is now adjusted to offset the motion of these average planetoids, stars appear as lines and planetoids as well-developed points. While there will be a slight amount of blurring in the case of those planetoids which are nearer or farther than the average, and hence slower or faster, there is the great advantage that **ALL** the light reaching the plate from any single one builds up in a limited spot and the smallest and dimmest, unable to mark itself on a plate when moving, leaves a clear, firm impression!

Considering all these facts, it appears probable that the larger asteroids do have satellites. The capture of some of the many small bodies moving at almost the same speed would follow easily from their greater mass, and there is excellent hope that the improvement in photographic technique will soon give us incontrovertible proof. But no asteroid is large enough to have an atmosphere, none has a powerful enough gravitational force to keep light gases from drifting off into space.

Yet there is the mystery of *Vesta's* light. Third largest of the asteroids, *Vesta* outshines all, and though only 239 miles in diameter has an albedo, or reflection intensity, greater than the Moon—and as high as Venus or any planet with dense, cloud-filled atmosphere! In attempting to account for this circumstance, science denies the possibility not only of atmosphere or clouds, but even ice, which has a

(Please turn to page 111)



FIRST S-F LETTER IN 7 YEARS

Dear Editor:

This epistle is the first in over seven years which I have directed to a science-fiction magazine, and the first thing I desire to do is to congratulate you on your enterprising new mag, DYNAMIC, which first eclipsed this old earth with the Feb. issue, 1939! I am somewhat of an author myself, having twice in the glorious past seen my humble creations in print in two other s-f mags. And I now desire to give my estimation of the stories in the new DYNAMIC. Hope I'm not being too impertinent!

First, your cover, and Paul gives us a swell one. "Lord of Tramerica," is another feather in Coblentz's headdress! I especially admire his use of time travel. Personally I do not like plots in which time travel is the main theme—but then I'm not the only "catfish in the sea"! The picture illustrating this epic bears me out when I murmur that Paul can't beat with mechanical drawings—but humans—oh shocks! Terrible!

"The Mercurian Menace" by Bond involves a novel situation and is well written. In a story like this, description is the thing and Bond seems to have plenty of that. I don't care for Binder as an artist.

"Mutineers of Space" by Schbach could use a sequel! Yes, this tale is a good rollicking adventure story and such a tale could be relished in every issue of DYNAMIC. But wait! ONLY ONE! And I may say that Marchioni is your artist for people! He has the right snap!

I appreciate "The Test Tube," although, being an ardent astronomer, I dislike the name.

"Message from the Void," by Marvity, could be consigned to the void for all of me! And I still don't like Binder!

"Quest of Zipantorica!" Well, I haven't read it yet, but as I'm a student of Mayan Indian Lore, you may expect some criticisms in my next letter—if you accept this wind bag!

Mr. Waldo Church
2227 Avenue G, Council Bluffs, Ia.

PRAISE FOR BRINGING BACK PAUL

Dear Editor:

Two of the better magazines on the stands today, even though they are beginners, are MARVEL SCIENCE STORIES and DYNAMIC SCIENCE STORIES. For the first part, they are to be praised for bringing Paul back to the science-fiction fold. His cover for the February DYNAMIC cover was breath-taking, much better than the previous one in MARVEL. His only fault lies in the black and white drawings. He fails to follow the story content. Although this is a minor detail, it is a source of irritation to discriminating readers. "The Mercurian Menace," Wesco good, and Marchioni only fair in the February issue. The latter has done better in the past. Enough of the artistic value.

"The Lord of Tramerica," biting satire, action, suspense and humor—"Mutineers of Space," good action and characterization—"Quest of Zipantorica," emotion and exciting adventure—"The Mercurian Menace," humorous and adventuresome—"The Message from the Void," old and well-worn plot, clever ending. All these were fine examples of science fantasy and I am hoping that the stories in future issues of DYNAMIC will be on the same style. Your companion magazine, I see, has reverted to the pure science type of tale, so that leaves a nice balance, satisfactory to all types of readers.

I close with this plea—NO MORE DEPARTMENTS—two are quite enough.

Charles B. Hidley

EXCELLENT RECORD

Dear Editor:

I just finished reading the February "Marvel Science Stories," and found it remarkably good. "After World's End" is an excellent addition to the long series of interplanetary and interstellar adventure stories that Williamson has written in serial form for other magazines. If the human race ever turns out any representatives who can succeed against the hopelessly desperate odds which Williamson's characters overcome, there will be little likelihood of the race ending. I am especially fond of the humorous, garrulous, but indomitable character which, in this story was represented by the sandbar, Betal, and, in earlier stories, notably by Gilca Habikula. You can't go wrong, as long as you have writers like Burke and Williamson doing your book-length features. Incidentally, I noticed a suggestion by one reader that you cut the length of these stories from 50,000 to 30,000 words. Don't do it! A great many stories must be long to be good.

"Faster than Light," is a good human interest story, just romantic enough. The suggestion that the velocity of light may decrease over great distances is interesting as a possible explanation of the inconceivably vast apparent velocity of distant star-clusters. Incidentally (correct me if I'm wrong) I believe that, while Einstein makes the absolute velocity of light the main premise in his famous general theory, I think he deduces, at one point, that this velocity may NOT be constant, and then points out that this deduction does not in any way invalidate his theory! Anyway, that is the idea I got after a very careful study of a little, "popular" exposition of the subject. I wouldn't attempt to wade through his mathematics, so perhaps my interpretation is wrong.

"Fast Beyond Concept" embodies an idea that might well have been the basis of a much longer story. There is really very little in the story except the presentation of this idea.

"The Weather Adjudicator" is timely and humorous. And what a success the plan was—for war!

Witley Ley's article, as usual, was interesting. And, I think, less likely of being carried out soon than in his more frequently mentioned dream of interplanetary travel by rocket ships!

The cover is good, as is Paul's illustration for "The Weather Adjudicator."

I think that Marvel has jumped up pretty close to the top of the heap in this number—One extremely good story and no bad ones is an excellent record—one, by the way, which was not achieved in the first two issues, because of the Kuttner stories. As I mentioned in a previous letter, Kuttner has written some fine stories for other magazines, but those two were not so hot.

D. B. Thompson
3136 Q St., Lincoln, Nebr.

LOYAL READER

Dear Editor:

Thought I'd drop you a few lines to let you know that I'm a loyal reader of MARVEL SCIENCE STORIES.

The best novel you have yet printed was "After World's End" by Jack Williamson. I'll say this much for him, when he writes a story you can understand it. Some writers use big words and "thick" terms that stump all but an expert in science.

Wesco was once a good illustrator, but during the past two years his work has shown a steady decrease. Your best illustrators are Marchioni and Schomburg. Paul is also good, but he can't compare with these. How about letting Schomburg do a cover, and let Marchioni and Paul do inner illustrations?

Now about DYNAMIC: Your first issue was certainly a humdinger. Coblentz was great in "Lord

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Of Transerica." Cover: Great! continue to use Paul for covers on DYNAMIC. Senders' cover for DYNAMIC was not as good as his first for MARVEL.

Blaine R. Dunmire
414 Washington Ave., Charleroi, Pa.

NO ORDINARY THRILLERS

Dear Editor:

Allow me to extend my most hearty congratulations for publishing the novel, "Tomorrow," by John Taine. This novel is certainly one of the best Science-Fiction stories that I have ever had the pleasure to read. In my opinion, having read every Science-Fiction magazine published during the last year, MARVEL is the best magazine in its field. Your stories have that air of realism about them that sets them apart from the ordinary thriller story with an interplanetary setting.

Your new feature, the scientific cover bearing no relation to any story, is excellent, but why don't you devote a full page to its explanation? The other features of your magazine are not bad.

As each issue of MARVEL so far has been better than the preceding one, I await with eagerness the next.

Maurice Kaplan
6507 N. Ashland Ave., Chicago, Ill.

NEW FAN MAG

Dear Editor:

Readers of your magazine will be interested in the new Futurian Federation of the World, an organization which will make a strong attempt to enroll every science fiction reader in its ranks. It is not necessary to be one of the ten most popular fans to join The Federation or to enjoy its organ; it is merely required that one have an active and alive interest in science fiction and in the future.

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Frederik Pohl

WILLIAMSON TOPS TAINE

Dear Editor:

Why do you even consider running a novel of more than 50,000 words? I trustingly believed every word of your promise in April-May DYNAMIC that "Tomorrow" would be the greatest super-science story ever written. But I was double-crossed.

Author John Taine may have produced some great stories in the past, but "Tomorrow" is by no means his best. Besides being intolerably long, it was vague and talky and too full of aimless conversation and discussion. Moreover, it suffered painfully in comparison with your earlier "Survival" by Burke and the fascinating, incomparable "After World's End" by Jack Williamson.

Incidentally, besides having probably the smoothest prose-style of any science writer, Williamson has, in the latter yarn, originated the best group of characters I've ever encountered. Bariborn and Little Rogo and Setal will live forever in the memory of fantasy enthusiasts.

It is gratifying to see the magazine sticking closer to good taste. The first issue tottered dangerously. Sex can only ruin science fiction. No class of pulp publications has higher standards than fantasy fiction, and the reading public will keep them that way. Stories like "Dr. Harter," "Parker," "Star Light," and "After World's End" are what make a magazine great. Maintain that level, and you'll have a mag to be proud of.

Colebrent's vaunted stories have little attraction for me. They are too repetitious and their outcome too obvious. And some, I regret to say have been decidedly mediocre, not to say amateurish.

(Continued on page 110)



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Lightning Strikes Once

(Continued from page 103)

sternly reproving. Mary wanted to throw herself into his arms; he repulsed her.

"Mary! You've made some mistake at the controls. It's killed him. You didn't..."

"No, no, I tell you. Listen..."

His unbending sternness silenced her. She did not at once realize what had happened. She looked skyward; there still was not a cloud. Memory of the past few seconds told her nothing. She couldn't tell Morris now that his partner had aimed the bolt at the laboratory. She looked at the tall steelwork of the outside structure, the landmark Kardel had been so insistent upon rearing as a monument. Understanding came.

"Morris," she said softly, "before you get any wrong ideas. Let me talk; I think I can explain. Please—dear."

Jules softened and followed her to the base of the tower. Kardel, lying sprawled

(Turn to page 111)

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(Continued from page 108)

Kuttner has marvelous control of atmosphere in his stories, but it could be directed to more effective channels. His long novels lack organization; are too much hodge-podge.

Burks does better with long novels than shorts. There is a certain literary flavor about his novels, a sort of dignity, that sets them apart from others. All in all, congratulations on a generally fine mag and post! How about an amateur author's contest?

Bill Brady

Wolverine, Mich.

BEST S-F STORY

Dear Editor:

I have just finished reading the fourth issue of MARVEL, and my impression is very favorable. Of course "Tomorrow" was the best s. f. story I ever have read.

I would like to see some covers with space ships, machinery and planets. I don't care much for scenes of people.

Might you print once a long interplanetary story by Kando Binder or Edmund Hamilton?

Erich Vero

206 West 106th St., New York City

WANTS OLD-TIMERS

Dear Editor:

Norman Saunders contributes a fine cover for the current issue of your magazine. I hope that he continues his fine work. For future covers, I'd suggest alternating Paul, Saunders, and Wesson. All of their work is better than average.

Taine comes through with another swell story! It isn't often that we come across intriguing stories such as this, and so this one is particularly welcome! I hope to read more of Taine in your pages in the future.

Harl Vincent's "Newscast" is another good story. Not of the best, perhaps, but interesting. . . .

I'd like to make some suggestions:— How about giving us one or two more stories each issue. Say three short stories and one novel each issue.

Another thing, I wish you would have more illustrations. One illustration for a short story is expected; but, for a novel you should have at least four or five full-page drawings! More illustrations tend to give the magazine a better appearance.

Enlarge the readers' department by one or two pages, using that small type. I'm sure this would be welcomed by most readers.

I'd like to have some novels by Coblenz, Williamson, P. Schuyler Miller, Simak, Kando Binder, Burks, Hamilton, and some of the other "old-timers" in future issues of MARVEL.

Here's wishing MARVEL and DYNAMIC loads of luck!

John V. Baltadonis

Editor—Science Fiction Collector

1700 Frankford Ave., Philadelphia, Pa.

BIGGER AND BETTER

Dear Editor:

Four issues of MARVEL now repose in my files and on thumbing through them I note the rapid improvement "our" mag has made. At first, it is true, the mag had a spicy atmosphere but now it seems to have thrown that off.

The booklength novels have been getting bigger and better. Burks' "Survival," Williamson's "After World's End," and Taine's "Tomorrow" are examples. The companion mag, DYNAMIC, has also been putting out some good science-fiction.

A question, in closing: Do you intend to publish the Professor Jameson series by Neil R. Jones?

George Aylesworth, Box 686

Mackinaw City, Mich.

What's Your Question?

(Continued from page 106)

low but distinct vapor pressure sufficient, in a field of such low gravity, to dissipate it into space during the long span of astronomical time. The only possible solution seems that Vesta is composed of quartz crystals or masses of white rock—which has interesting implications.

It might well be considered unlikely that in the original throwing off of solar material there would be a mass, as great as Vesta represents, composed of a sharply limited number of elements, constituted as the albedo explanation requires. That specialization is more easily understood if the asteroid is regarded as a former part of a body of planetary size, in which large amounts of molten materials had first found segregation. Thus we find support for the other theory of the origin of the asteroids—and are confronted with the Last Planet as a tangible entity!

What was it like? Its size, judged from the aggregate of asteroids, was just about that of the Earth; its orbit lay beyond that of Mars. Therefore it would have cooled and become habitable long before this planet. Its disruption, estimated from the age of meteorites believed also to have been part of it and dated from the breakdown of radioactive materials, occurred in relatively recent astronomical times. At that time might not its race have been far more advanced than ours? **AND MIGHT THERE NOT, ON THE GREAT ASTEROIDS, STILL BE REMAINS OF THOSE SUPERIOR ACHIEVEMENTS?**

IT WILL COME. Out into space man must and will go, inexorably driven to expand the boundaries of his knowledge. Close at hand lies the greatest mystery of our sun-system. Inevitably, the day will come when man sets foot on the great fragments of Earth's sundered twin!

In the future it lies, but in the **KNOWN** future that is the **TODAY** of **MARVEL'S** scientification founded on science.

Lightning Strikes Once

(Continued from page 109)

with a sheaf of bills just beyond the reach of clawed and crisped fingertips, was not a sight to be seen. Yet here was mute testimony of one underlying cause.

"Morris," whispered the girl. "Kardel was trying to produce a bolt of lightning to kill you. He had produced one in the forest before you arrived. Seeing where he had focussed the potential center I sensed what he was doing. I ran to warn you. But look; look up at the tower."

Jules looked. He had often wondered why Kardel had reared it so high.

"Don't you see?" asked Mary May. "He figured that the shortest distance to ground from his focus of potential was the laboratory, which was directly beneath. But the tip of the tower was actually the point of shortest gap. Kardel erred; not I. His greed made him forget his mathematics."

Jules swept the girl into his arms. "Forgive me, darling," he whispered. "I was so shocked by the tragedy I hardly knew what I was saying."

Wetly against his lapel, Mary May breathed; "Of course I forgive you. I love you, Morris."

And, to herself, "Yes, Kardel erred—in more ways than one."

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WHAT'S YOUR ANSWER?

Answers to questions on page 100

1. Å—angstroms or angstrom units; Btu—British thermal units; c.g.s.—centimeter-gram-second (system of units); mg—milligrams; F—Fahrenheit (scale); f—farads; cm—centimeters; c.m.—center of mass; K—Kelvin (scale); kv—kilovolts; e.m.f.—electromotive force; e.m.u.—electromagnetic units. (1 point for each symbol correctly identified.)

2. One in which a small change of temperature produces a relatively large change of volume (6 points).

3. An Ammeter is an instrument for measuring the amperage of a current; an anemometer, for measuring the force or velocity of wind; a sphygmomanometer, blood pressure; a brontometer, the duration of thunder; a sextant, angular distance. An annuitant is the beneficiary of an annuity. (2 points for each.)

4. $100^{\circ} \text{C} = 212^{\circ} \text{F}$ (the boiling point of water); $212^{\circ} \text{C} = 413\frac{3}{4}^{\circ} \text{F}$ (to get F, multiply C by 9, divide by 5, then add 32). $32^{\circ} \text{F} = 0^{\circ} \text{C}$ (the freezing point of water); $0^{\circ} \text{F} = -17\frac{1}{4}^{\circ} \text{C}$ (to get C, first subtract 32 from F, then multiply by 5, and divide by 9). (3 points for each temperature correctly converted.)

5. One that is devoid of active chemical properties or non-combustible (6 points).

6. a) Phylum; b) class; c) order; d) family; e) genus; f) species. (2 points for each division correctly placed.)

7. Caveology, or the science of caves. (6 points.)

8. Both are vaccines (3 points). An antigen, a substance which stimulates the organism to produce antibodies (2 points), is a synthetic vaccine (1 point); a serum, a blood constituent in which antibodies have already been produced (2 points), is a natural vaccine (2 points).

9. Streptococcus is a bacterial micro-organism (3 points); streptocarpus is the seed (smallest in the world) of an herb (So. American, with 1,800,000 seeds to an oz.) (3 points).

10. a) 40 miles an hour.

b) 1 to 4.

c) 11.

d) 10,000,000,000,000,000,000,000,000,000. (5 points for each.)

YOU CAN PLAY THE MELODY OF "SWANEE RIVER" RIGHT NOW—HERE'S HOW



Thousands Now Play Who Never Thought They Could



Surprised Friends

I want to say that my friends are greatly surprised at the different places I can already play. I am very happy to have chosen your method of learning.

"B. F., ROSEL, N. Y.



Learned Quickly at Home

I didn't dream I could so easily learn to play without a teacher. Now when I play for people they hardly believe that I learned to play so well in so short a time.

"H. C. B., CHIC.



Best Method by Far

Enclosed is my last examination sheet for my course in Tenor Sax. This completes my course. I have taken lessons before under teachers, but my instructions with you were by far the best.

"A. O., MINN.

*Actual pupils' names on request. Pictures by professional models.

SEE HOW EASY IT IS!

* Look at the diagram above. The first note is "E." That's the white key to the right of the two black keys near the middle of the piano keyboard. The next note "D," one note lower, is the next white key to the left and, similarly, the next note, "C," is the next white key to the left of that one. The following three notes are simply a repetition of the first three and there you are, actually playing the familiar melody of "Swanee River."

That's the modern way to learn music: you learn to play by playing. No tedious study and practice. This shortest method starts you on a real tune in your very first lesson. After a few weeks, you'll be able to read the notes off like a regular musician. Soon you are able to play scores of familiar favorites and new hits at sight. And that applies to any instrument: violin, guitar, accordion, saxophone, whichever you want to learn. It takes only a few minutes a day, costs only a few cents a lesson.

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Without cost or obligation to me, please send me your free Illustrated Booklet and Demonstration Lesson, showing how I can learn at home to play the instrument checked below. (Do you have instrument?.....)

Piano	Saxophone	Mandolin	Clarinet	Ukulele
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Dear women called portrayers of their loved ones in holsters; and men carried them in watch cases. Those days are gone, but the desire to carry the portrait of a loved one is as strong as ever. Not until the amazing secret process for making a photograph in a holster was discovered, was it possible to revive this grand old custom and to satisfy the hunger of every man bent to embrace again this grandest of all sentiments. Now mothers and fathers will welcome this old-fashioned picture in a holster, and men will carry the all-time picture of their beloved child. How happy every man and woman will be to keep close the memento of a departed loved one. Carry them with them always, night and day, this beautiful Picture Ring.

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NOTES



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Enclosed is photo. Please rush me individually made Picture Ring and starting equipment. Will pay postman the plus few cents postage. It is understood that if I am not entirely satisfied, I can return ring within a day and you will refund my money in full.

Wend Tietze in Natural Life Like Colors. 14c Extra

Name _____

Address:

File	Grade
------	-------

POUR RING SIZE: Wrap string of paper around second joint of finger. When you reach the middle finger, place string on this joint. Measure string from finger to end of hand.



FOOT ITCH

ATHLETE'S FOOT

**Send Coupon
Don't Pay Until Relieved**

According to the Government Health Bulletin No. E-28, at least 50% of the adult population of the United States are being attacked by the disease known as Athlete's Foot.

Usually the disease starts between the toes. Little watery blisters form, and the skin cracks and peels. After a while, the itching becomes intense, and you feel as though you would like to scratch off all the skin.

BEWARE OF IT SPREADING

Often the disease travels all over the bottom of the feet. The soles of your feet become red and swollen. The skin also cracks and peels, and the itching becomes worse and worse.

Get relief from this disease as quickly as possible, because it is very contagious, and it may go to your hands or even to the under arm orrotch of the legs.

Most people who have Athlete's Foot have tried all kinds of remedies to relieve it without success. Ordinary germicides, antiseptics, salve or ointments seldom do any good.

HERE'S HOW TO RELIEVE IT

The germ that causes the disease is known as Tinea Trichophyton. It buries itself deep in the tissues of the skin and is very hard to kill. A test made shows it takes 15 minutes of boiling to kill the germ; so you can see why the ordinary remedies are unsuccessful.

H. F. was developed solely for the purpose of relieving Athlete's Foot. It is a liquid that penetrates and dries quickly. You just paint the affected parts. It peels off the tissue of the skin where the germ breeds.

ITCHING STOPS QUICKLY

As soon as you apply H. F. you should find that the itching is quickly relieved. You should paint the infected parts with H. F. night and morning until your feet are well. Usually this takes from three to ten days, although in severe cases it may take longer or in mild cases less time.

H. F. will leave the skin soft and smooth. You may marvel at the quick way it brings you relief; especially if you are one of those who have tried for years to get rid of Athlete's Foot without success.

H. F. SENT ON FREE TRIAL

Sign and mail the coupon, and a bottle of H. F. will be mailed you immediately. Don't send any money and don't pay the postman any money; don't pay anything anytime unless H. F. is helping you. If it does help you, we know you will be glad to send us \$1 for the supply at the end of ten days. That's how much faith we have in H. F. Read, sign and mail the coupon today.



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397 Perdido St., New Orleans, La.

Please send me immediately a complete supply for foot trouble as described above. I agree to use it according to directions. If at the end of 10 days my feet are getting better, I will send you \$1. If I am not entirely satisfied, I will return the unused portion of the bottle to you within 15 days from the time I receive it.

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